

COMMODORE

WORLD

THE NEWS MAGAZINE FOR COMMODORE 64 & 128 USERS

Issue 5
Volume 1, Number 5
\$4.95 U.S.
\$5.95 Canada



SOFTWARE SUPPORT INTERNATIONAL

We Carry America's Largest Selection of C-64/C-128 Software!

ENTERTAINMENT

Beyond Zork 128	\$9.97	Plundered Hearts	\$12.97
Defender of the Crown	\$9.97	Pool of Radiance	\$9.97
Destroyer	\$9.97	Portal	\$14.97
Double Dragon 2	\$9.97	Questron 2	\$9.97
Heavy Metal	\$12.97	Realms of Darkness	\$12.97
Heros of the Lance	\$9.97	Roadwars	\$9.97
Impossible Mission 2	\$9.97	Sidearms	\$9.97
Keys to Maramon	\$9.97	Steel Thunder	\$9.97
Maniac Mansion	\$9.97	Strip Poker	\$14.97
Mean Streets	\$9.97	Trum Castle Casino	\$9.97
Monopoly	\$9.97	Wheel Fortune 1-2-3	\$9.97
Ogre	\$12.97	Zork 1-2-3	\$9.97
Pacman/Ms Pacman	\$9.97		

SPORTS & FLIGHT

4th & Inches	\$7.97	Star Rank Boxing	\$4.97
America's Cup Sailing	\$4.97	Tenth Frame	\$9.97
Dave Winfield Batter Up	\$9.97	Tony LaRussa Baseball	\$4.97
Fast Break	\$7.97	Tournament Tennis	\$7.97
Football/Sublogic	\$9.97	TV Sports Football	\$9.97
Int Hockey	\$7.97	WWF Wrestling	\$4.97
Jack Nicklaus Golf	\$9.97	Acrojet	\$7.97
Jordan vs Bird	\$7.97	F-14 Tomcat	\$9.97
Leaderboard Golf	\$7.97	F-15 Strike Eagle	\$8.97
Pro Football Facts	\$9.97	F-19 Stealth Fighter	\$9.97
Pro Soccer	\$4.97	Jet	\$14.97
Pure Stat Baseball	\$9.97	Jet Combat Sim	\$7.97
Rick Davis Soccer	\$7.97	Spifire Ace	\$9.97
Sporting News Baseball	\$9.97	Top Gunner	\$9.97

ACCESSORIES

C-128 RGB Color Cable	\$17.95	Com Modem Adapter	\$15.95
C-64 Color Monitor Cable	\$8.95	Floppy Disk Notcher	\$6.95
Cartridge Port Expander	CALL	Dust Covers - specify	\$7.95
Computer Hand 2	\$6.95	Joysticks	CALL
Convert A Com	\$24.95	Aprotek 1200 Baud	\$39.95
Disk Bank 10/3.5"	\$1.95	Aprotek 2400 Baud	\$49.95
Disk Bank 10/5.25"	\$1.95	1351 Smart Mouse	\$44.95
Disk Bank 100/3.5"	\$12.95	MW 350 Interface	\$44.95
Disk Bank 100/5.25"	\$12.95	Power Supplies	CALL
Disk Bank 70/5.25"	\$7.95	Printer Ribbons	CALL
Disk Mailers	\$0.39	Userport Expander	\$24.95
Drive Cleaners	\$6.95	Video Ram Upgrade	\$49.95
Serial Cable (6 pin: din 6ft)	\$8.95	3.5" 10 cnt.Floppy	\$7.95
Serial Cable (6 pin: din 12ft)	\$9.95	5.25" 10 cnt.Floppy	\$3.95
Drive Power Cable	\$7.95	5.25" 25 cnt.Used Floppy	\$3.95
User Port Cable	\$15.95		

PRODUCTIVITY

1750 Super Clone	\$99.95	Graphic Label Wizard	\$14.97
Awardware	\$9.97	Home Designer 128	\$24.97
B/W Programmer's Tools	\$9.97	Mach 128 Cart	\$24.97
Bob's Term Pro 64	\$9.97	Manager, The	\$9.97
Bumper Sticker Maker	\$9.97	Maverick v5	\$24.95
B/W Power C	\$7.97	Model Diet	\$9.97
C128 Graphics Bundle	\$29.97	Movie Maker	\$8.97
Certificate Maker	14.97	Newsroom Bundle	\$14.97
Christmas Model Kit	\$9.97	Outrageous Pages	\$14.97
CSM Protection Manual	\$14.97	Paperclip 64/128	\$29.97
CSM Protection Man 2	\$19.97	Personal Newsletter(GEOS)	\$12.97
Data Manager 2	\$12.97	PFS File & Report	\$19.97
Designer's Pencil	\$9.97	Postcards	\$14.97
Desk Manager	\$9.97	Printmaster Plus	\$19.97
Drive Align 1541/71	\$12.97	Printmaster Art 1-2 or 3	\$12.97
Easy Working Tri Pak	\$9.97	Superbase 64	\$24.97
Fast Load Cart	\$19.97	Superscript 128	\$12.97
Fleet System 3 (128)	\$14.97	Swiftcalc w/Sideways	\$12.97
Geos 64 v2	\$39.97	Term Paper Writer 128	\$9.97
Geos 128 v2	\$44.97	Video Wizard	\$14.97

EDUCATIONAL

Color Me	\$9.97	Snoopy Writer	\$9.97
Dinosaurs	\$9.97	Spell It	\$12.97
European Nations & Loc	\$9.97	Spellicopter	\$9.97
Keys to Typing	\$9.97	Stickybear ABCs	\$9.97
Kindercomp (cart)	\$9.97	Stickybear Math	\$9.97
Lovejoy's SAT	\$12.97	Stickybear Numbers	\$9.97
Magic Spells	\$9.97	Typing Tutor 4	\$9.97
Reader Rabbit	\$9.97	Word Attack	\$9.97
Snoopy Sky Scramble	\$9.97	Word Spinner	\$9.97

Items Listed Above Do Not Include Shipping. U.S 48 States - Add \$5.50 per order. Alaska, Hawaii & Canada - add \$5.50 for the first piece and \$1.00 per each additional piece per shipment. Second Day Air shipping is available. Call for shipping charges. Call Or Write For Your Free c-64/128 Catalog Listing HUNDREDS Of Commodore Products And Special Offers For Your Computer. Our Order Takers Are On Duty 6:00 a.m. - 5:00 p.m. M - F and 7:00 a.m. - 3:00 p.m. Sat. - Pacific Time.

**SOFTWARE
SUPPORT**

**Software Support Int.
2700 N.E. Andresen Rd.
Suite A-10
Vancouver, Wa 98661
(206) 695-1393**

CALL TOLL FREE TODAY!

1-800-356-1179

Major Credit Cards Accepted.

C O N T E N T S

ISSUE 5

VOLUME 1

NUMBER 5

COMMODORE WORLD

THE NEWS MAGAZINE FOR COMMODORE 64 & 128 USERS

GENERAL MANAGER

Charles R. Christianson

EDITOR

Doug Cotton

TECHNICAL EDITOR

Mark Fellows

ADVERTISING SALES

Charles A. Christianson

413-525-0023

GRAPHIC ARTS

Doug Cotton

ELECTRONIC PRE-PRESS & PRINTING

Mansir/Holden

ON THE COVER

Absolutely nothing, but it took longer than usual to generate

Cover art by Doug Cotton

Commodore World is in no way affiliated with Commodore Business Machines, Inc. Commodore World is published 8 times annually by Creative Micro Designs, Inc., 15 Benton Drive, East Longmeadow MA 01028-0646. Second-Class Postage Paid at East Longmeadow MA. Annual subscription rate is US\$29.95 for U.S. addresses, US\$35.95 for Canada or Mexico, US\$45.95 for all EC Countries, and US\$57.95 to all other addresses worldwide. All subscription payments must be provided in U.S. Dollars. Mail subscriptions to CW Subscriptions, c/o Creative Micro Designs, Inc., P.O. Box 646, East Longmeadow MA 01028-0646.

Entire contents copyright © 1994 by Creative Micro Designs, Inc., unless otherwise noted. No part of this publication may be printed or otherwise reproduced by any means without prior written consent from the publisher. All programs published in this publication are for the personal use of the reader, and may not be copied or in any way distributed. All rights reserved. Programming examples and routines in this issue which are presented for educational purposes may be used in the creation of programs by the purchaser of this of this magazine, provided credit for the routines is clearly presented in either the program documentation, or the program itself. Creative Micro Designs, Inc., assumes no responsibility for errors or omissions in editorial, program listings or advertising content. Creative Micro Designs, Inc., does not assume any liability for advertisers' claims.

POSTMASTER: Send address changes to: CW Address Changes, c/o Creative Micro Designs, Inc., P.O. Box 646, East Longmeadow MA 01028-0646.

FEATURES

- 18 **GEOS 101** by Steve Vander Ark
An introduction to GEOS for those less familiar with what it's all about.
- 20 **GEOS 102** by Steve Vander Ark
All about installing GEOS and taking your first tour of the GEOS deskTop.
- 22 **GEOS 103** by Steve Vander Ark
The never-before-published third installment, covering configuration of GEOS.
- 24 **COMMODORE LIQUIDATION UPDATE** by Tim Walsh
Find out what's been going on behind the scenes with Commodore's assets.

REVIEWS

- 30 **SOFTWARE: FINANCIAL COOKBOOK** by Sherry Freedline
This little financial helper may just have your recipe for success.
- 30 **SOFTWARE: PHOTO MOVER V3.0** by Timothy R. Hewelt
GEOS photo album maintenance is a breeze with this updated utility.
- 32 **GAMES: MINIVIEWS** by Sherry Freedline
Crazy Cars, F40 Pursuit Simulator, Last Ninja 2, Tie Break, Rings of Medusa, & Conflict in Vietnam.
- 34 **HARDWARE: GEOCABLE II** by Gaelyne R. Moranec
Speed up printing with GEOS and other applications with this new printer cable.
- 35 **HARDWARE: SCREENSAVER DELUXE** by Doug Cotton
Protect your monitor from burn-in with this product for the C128.
- 35 **BOOKWARE: SIMPLE INTERNET** by Gaelyne R. Moranec
Learn the Internet while helping that old gumshoe Archie Finger solve a case.

COLUMNS

- 14 **JUST FOR STARTERS** by Steve Vander Ark
Some general information about software and your computer.
- 16 **FOREIGN EXCHANGE** by Joseph Gaudi
A look at another new product making waves overseas.
- 36 **GRAPHIC INTERPRETATION** by Steve Vander Ark
Steve continues his mini-series on importing and exporting graphics.
- 38 **GEOPROGRAMMIST** by Maurice Randall
Making GEOS applications work with 40 or 80 column output—or both.
- 40 **BASIC INSTINCTS** by Gene Barker
The Alliance strikes back with added weapons and cloaking in STARSHIP COMBAT.
- 44 **SCSI MAGIC** by Doug Cotton
Corrections for some errors in past installments and the start of a new SCSI utility.
- 45 **HARD TIPS: ADAPTING SEGA GAMEPADS** by Mark Fellows & Doug Cotton
With a simple modification, you can use Sega gamepads in place of joysticks.
- 46 **ADVANCED TECHNIQUES** by Chris Brenner
Tapping into the 64's built-in routines for easy floating.
- 49 **PERIPHERAL VISION** by Jim Butterfield
What goes in, must come out. For more details, read this article!
- 53 **CARRIER DETECT** by Gaelyne R. Moranec
We continue to look at options for mastering e-mail.
- 55 **OVER THE EDGE** by Don Radler
Are Graphical User Interfaces holding us back?

DEPARTMENTS

- | | |
|--------------------|--------------------------|
| 2 FROM THE EDITOR | 12 TOP TIPS |
| 4 BACKTALK | 17 USER GROUP CONNECTION |
| 4 ERROR CORRECTION | 26 COMMODORE TRIVIA |
| 8 ON THE HORIZON | 54 CLASSIFIED ADS |
| 10 THE CONNECTION | 56 ADVERTISER'S INDEX |

**See Our
CHK-LIST
Utility
On Page 43**

FROM THE EDITOR



Ever since I can remember, I've enjoyed reading. All throughout my youth I'd stay up late at night, when I should have been sleeping, reading novels by Heinlein, Clark, Tolkien, and many other fiction, science-fiction and fantasy authors. I was fascinated by the visions of the future found in many of the books I read; computers, androids, robots, people-movers and other technological advances. I'd like to think that all this reading about these subjects stirred my curiosity with technology as I grew older, and may very well be why I'm here today, writing to you as Editor of Commodore World.

I never did quit reading, though I don't find the time to read many novels anymore. I do, however, spend any spare moments I can get looking at the latest issues of computer magazines from around the world. It's interesting and important to stay abreast of what's going on, not only in the Commodore market, but in all the other various computer platforms as well. In doing so, it still strikes me as funny that many of the writers for MS-DOS and other computer-platform magazines can trace their beginnings back to when they owned a Commodore computer. Lance Elko, Editorial Director for CD-ROM Today magazine, recalls in his December 1994 editorial about how he purchased his first personal computer in December of 1982—a Commodore

64 that set him back a cool \$600. It's too bad Lance doesn't still use it, because he can only recall the painfully slow and troublesome loading experiences he had using the \$75 tape drive. Charles Cooper, writing in the Trends & Technology section of December 1994's Computer Shopper takes a shot at the Commodore 64 as being one of those home computers that was marketed in the 80's, all of which he claims were perpetrating a fraud in trying to lead the home market to believe that computers were ready for home use. In the Tech Section of that same issue of Computer Shopper, Stan Veit briefly recounts the story of Geoworks (formerly Berkeley Softworks), and recalls that GEOS was a popular GUI whose beginnings were intertwined with the success of the Commodore 64.

Now, whether the comments all these writers are making are good or bad, one thing is certain—they all remember the Commodore 64, and consider it enough of a historical icon to mention it in their writing in magazines which nothing to do with Commodore computers. I once read a statement that I hold as one of my own true convictions: Commodore was the only company to truly define the home computer market, and therefore they reaped the rewards of filling homes with computers. Commodore didn't just "catch a wave" and ride it—they truly showed consumers what a home computer could do in their early advertising campaigns. Granted, the revolving door on the President's office at West Chester lead them to forget a lot of what they taught the rest of the world, and the policies that came to be lead to their demise from a market they once owned in every sense. But that doesn't make their earlier deeds any less spectacular.



Doug Cotton
Commodore World Editor



Software Hut

Folcroft East Business Park 313 Henderson Dr Sharon Hill, PA 19079

Commodore
AMIGA

Info 610-586-5701
FAX 610-586-5706

Orders 800-932-6442

Hours: Mon-Fri 9 to 6
Sat 10 to 4 - Eastern

We do not publish a catalog. Please call if you don't see what you want.

• **SPECIAL OFFER** • Receive either *Master Type* Typing cartridge or *Jack Attack* cartridge for only \$2.00 additional with any order - Originally valued at \$49.00

CD-32

NOW AVAILABLE

NEW CD-32 by Commodore, comes with Sleepwalker and Pinball Fantasies!

\$279.95

Over 100 CD-32 titles in stock! Call for pricing and availability.

We also carry a full line of all Amiga products, in stock!

1541-2 DRIVES

These are completely NEW & boxed by Commodore from their latest production run. Includes all Cabling, Manuals, and Disks. Hurry as supplies are limited.

\$99.95

CBM TEST KIT

64 Diagnostic Cart. w/Manual \$21.95
128 Diagnostic Cart. w/Manual 24.95
64 Dead Test Cart. w/Manual 29.95

PERIPHERALS & ACCESSORIES

1670 Modem - 1200 Baud, New, Boxed. Super Special Price, while supplies last.

\$19.95

1660 Modem - 300 Baud - \$9.95

1351 Mouse - New, unboxed - \$32.95

Micro R&D Printer Interface - For non-CBM parallel printers, supports graphics \$49.95

Suncom Icontroller - We have a limited supply of this joystick/mouse classic. \$29.95

5 or 8 pin Composite Cable \$14.95
C128 to Magnavox/1084 (Specify) 14.95
Computer/Disk Drive Cable - 6 ft. 12.95
Surge Protector w/EMI (6 Outlet) 14.00
1084S Monitor Call
1802 Monitor by Commodore 149.95

We stock Printer Ribbons for:
MPS 801, 802, 803, 1525, 1526,
1000, 1200, 1250
\$7.00 each

Specify your printer when ordering

Games & Closeouts

Airborne Ranger	\$10.00
Bad Blood	41.95
Below the Root	10.00
Big Boggle	14.00
Blackjack Academy	12.95
Chomp	12.95
Deja Vu	9.00
Demolition Mission - Space Racer	6.00
Dolphin's Rune	5.00
Felony!	9.00
Gateway to the Savage Frontier	14.00
Impossible Mission 2	8.95
Jack Attack cartridge	5.00
Jeopardy 1, 2, Jr, Sports (Specify)	10.00
Learning Bridge Made Easy	9.00
Moonmist	12.00
Navy Seals	12.95
PathWords	9.00
Plundered Hearts	12.00
President is Missing	9.95
Rambo 2	6.00
Risk	17.00
Secrets of the Silver Blades	14.00
Shoot'em Up Construction Kit	12.00
Stationfall	12.00
Swiss Family Robinson	10.00
Tass Times in Tone Town	9.00
Test Pilot Bundle (ATF, Crazy Cars, Tomahawk, Harrier, Infiltrator 2)	15.00
Three Stooges	12.95
Tony LaRussa Baseball	12.00
Tony LaRussa Teams (Specify)	7.00
View to a Kill	9.00
Weird Dreams	11.00
Wheel of Fortune 1,2,Gold,Jr (Specify)	10.00
Where (Specify) is Carmen S. D.?	27.00
Who Framed Roger Rabbit	22.00
World Games	12.00
Wrath of the Demon	22.00

LAST CHANCE PARTS

We have just acquired the last batch of Commodore factory repair parts and assemblies. All parts have a 60 Day Warranty through Software Hut. Hurry as supplies are limited.

CBM Part#	Description	Price
1540002-01	1541 Internal P.S.	\$12.95
1540048-01	1541 PCB Assm ALPS	19.95
1540048-03	1541 PCB Assm NEWT	19.95
250448-01	PCB Assm 1541B	19.95
250471-01	PCB Assm 1581	22.95
250735-02	Keyboard 1280	22.95
250772-01	Power Supply 1571	18.95
251053-10	Power Supply 64/64C	22.95
310379-02	PCB Assm 128	80.00
310420-01	PCB Assm 1571	22.95
318264-01	Commodore Joystick	5.95
326166-04	Keyboard 64	14.95
390205-01	Heavy Duty 64/64C P.S.	32.95
516402-02	64 Computer, ReCon.	109.95
601210-66	MPS 1200 Printhead	24.95

C64 TRADE-IN PROGRAM

Is your C64 or 64C broken?

Can't find any place to repair it? We have, refurbished by Commodore, C64 and 64C computers available. They include a Full New 90 Day Warranty. Simply send us your computer (no power supply or cabling needed) with a Check, Money Order, or your Credit Card number for \$69.00, plus \$10.00 shipping, and we will send you a newly refurbished computer upon receipt of your broken unit.

128D

These are the last batch left from CBM. Refurbished & with a 90 day Warranty. With Keyboard & Power Cable. Manuals not included. Perfect as a second unit.

\$179.95

Productivity

Bank Street Writer	\$28.00
Big Blue Reader 4	35.00
Data Manager 2 (64)	22.95
Dome Home Accounting	64.95
GEOS 64 v2.0	42.95
GEOS 128 v2.0	45.00
Geo File 64 or Geo Calc 64 (Specify)	45.00
Geo File 128 or Geo Calc 128 (Specify)	52.95
Geo Programmer	Call
Geo Publish 64	45.00
Jane 128	44.95
Master Type	8.00
Merlin 128	45.00
News Maker 128	10.00
Personal Choice Coll. (Write File Plan)	29.95
PrintShop	36.95
SwiftCalc (64)	22.95
Super 81 Utilities 64-128 (Specify)	14.00
Superbase 64 v3.01	26.95
WordWriter 6	34.95

Commodore Manuals

User Manual 128 Computer	\$9.95
User Manual 1700/1750 RAM	6.95
User Manual 1351 Mouse	5.95
User Manual 1764 RAM	6.95
Service Manual 1581 Drive	19.95
Service Manual MPS 1000 Printer	19.95
User Manual 1802 Monitor	5.95
User Manual MPS 1250 Printer	7.95
Intro Manual 1280	4.95
User Manual 2002 Monitor	7.95
User Manual 64C	6.95
User Manual 801 Printer	7.95
User Manual 802 Printer	7.95
User Manual 1702 Monitor	7.95

Software Hut 1581 Drive EXCLUSIVE

A BRAND NEW production run of 1581s, by Commodore, has been made available to Software Hut EXCLUSIVELY! These drives come with Commodore's full 90 Day Warranty. The drives are complete with all Cabling & Software, & bulk-packed in plain boxes. Call for special quantity pricing for Dealers and Users Groups. We offer these drives at a SUPER Low Price of:

\$99.95



1571 Drives are totally NEW units, with all cabling, a comprehensive manual, and a full 90 Day Warranty. Bulk packed in plain boxes. Perfect for your 128 or 128D computer. Order early as these will not last long at:

\$129.95

OUR POLICIES

No waiting for your orders to ship. Orders in by 2PM go out the same day. Second Day & Overnight shipping is available. International orders are shipped by Air Parcel Post, UPS or DHL. Domestic orders are shipped UPS.

• All orders are subject to credit card verification •

• All prices subject to change •



Supplies are limited and on a first-come first-serve basis. We accept Visa, Master Card, and Discover. We also ship COD, accepting Cash, Certified Check, or Money Order. Software and accessories shipping is \$6.00. Hardware shipping is \$6.00 for small items. Call for larger items (ie. Computers). COD add \$5.00. Minimum COD order is \$50.00. Canadian, APO, & International orders are welcome. We will bill only for actual shipping charges & insurance at time of order. 15% re-stocking fee on all returns not exchanged. Shipping is NOT refundable.

© Copyright 1994, TechWriters Inc. All Rights Reserved

BACKTALK

LETTERS AND QUESTIONS FROM OUR READERS

Just Can't Wait

I love Commodore World magazine, but unfortunately, by the time I receive the latest copy, several changes have occurred regarding the state of Commodore and the effects of liquidation. Couldn't there be a number or a Bulletin Board available for up-to-the-minute coverage?

Sincerely,
Don Bostic

Don,

You're quite right in that during the lag between when an issue goes to press and the time it turns up in your hands, a lot can happen. I might point out, though, that even now, the net result of the situation with Commodore is pretty much unchanged after months. Yes, some new details come available every few days or so, but there's been no change in the net result: Commodore is still in liquidation, and there's been no final determination on who will end up with the assets.

However, if you have access to the Commodore conferences on Fidonet, comp.sys.cbm in the Internet's newsgroups, or access to any of the Commodore areas available on a number of national networks, you'll see some of the latest info as it hits. You'll also have to wade through a lot of rumors and speculation, but that's just the nature of such forums.

I'm sure that when the major news item that everyone is waiting for hits, anyone who logs onto any Commodore-related service will be hard-pressed to avoid hearing about it. But I will point out one other source for those who aren't modem-equipped: Amiga World has a recorded message available for just this purpose. It's updated every week or two, or as often as something really worth mentioning happens. To listen-in on the latest scoop, dial (603) 924-2195.

- Ed.

Commodore World reserves the right to edit letters published in this column for length, spelling, and clarity. If you have questions or comments, write to: CW Backtalk, c/o Creative Micro Designs, Inc., P.O. Box 646, East Longmeadow MA 01028.

Telecommunications Oversights

I just received issue number 4 of CW, and once again, a very fine job! (Are you getting tired of hearing that yet?)

I would like however, to make a correction to Gaelyne Moranec's very comprehensive article on Telecommunications. In the side-bar on page 22, it says for CRS Online that there are no Internet services or fees. However there are quite extensive Internet services available. In all probability, the demo does not allow access to these services, so Gaelyne was not able to check them out.

CRS carries just about every Internet newsgroup available, with the exception of the alt.sex newsgroups. Internet E-mail is also available, and both are part of the basic subscription.

Other internet services available are ftp, telnet, and gopher. All of these come at a price of \$25.00 for 25 hours/megs. What is meant by that is that it purchases 24 hours of telnet or gopher, or 25 megs of ftp, or a combination of both. Every hour you use subtracts from the total number of megabytes available, and vice versa. (confused yet?). I have happily jumped all over the world, searching for files for the Commodore Conference on CRS Online.

CRS also is linked into a large number of networks, such as NaNet, Fido, Internet and others. A list of the Commodore specific conferences available on CRS follows.

Join #	Description	Network
CRS 2	CPM	Nanet
CRS 13	GEOS/C64 (Me!)	Nanet
CRS 74	TPUG (Toronto Pet Users Group)	Nanet
CRS 526	R-C64-128	RelayNet
CRS 983	F-CBM	FidoNet
CRS 1402	F-CBM-128	FidoNet
CRS 6020	F-CBM-Geos	FidoNet
CRS 1013	F-CPM-Tech	FidoNet
CRS 1281	F-Sci-for (Vortex-net 128 support)	FidoNet
CRS 1432	F-PCWrite (CBM emulators, etc)	FidoNet

CRS 4516	comp.sys.cbm	Usenet
CRS 6462	comp.emulators.cbm	Usenet
CRS 7197	comp.binaries.cbm	Usenet
CRS 7519	G-Commodore	Global-Link

As you can see, for lazy guys like me, it is almost one-stop shopping! If it wasn't for QWKRR, I would never get off-line, and my kids would forget what I look like.

If other readers of the magazine are in the greater Metropolitan Toronto area in Ontario, Canada, come on over and check the system out! Or say hello on the nets!

Yours,
Jim Dearden
Commodore Chairman of CRS Online

Thanks for pointing out this omission, Jim. I also got word from Phoenix Network that they too have Internet capabilities, while we reported none. Any of our readers who are interested are urged to contact The Phoenix Network at the number we listed in last issue for details.

Another omission from the Telecommunications feature in last issue: we failed to mention that GENIE
(continued on page 6)

ERROR CORRECTIONS

In Commodore World Issue 4's Just Asking, we forgot to fill in a dummy phone number entry for Skyles Electric Works. The phone number that should have appeared is:

(408) 737-1632

Additionally, there were some mistakes and omissions in two of our columns in Issue 4: *Peripheral Visions* and *BASIC Instincts*. Corrections for these errors can be found in this issue's installment of *BASIC Instincts* and in *SCSI Magic* (which takes up from where *Peripheral Visions* left off).



dieHard

the Flyer for commodore 8bitters

The perfect way to stay connected
to the **commodore** world!
Subscribe today!

The Future Has Arrived!!!

Copyright 1991 Commodore International, Inc. All Rights Reserved.



Each issue of *dieHard* comes packed with information to make your **commodore** work better for you and help keep you connected to other **commodore** dieHards. Here's what you'll get with your subscription to *dieHard*:

☛ Tips on all major **commodore** software and hardware like **GEOS**, Super Snapshot, Laser Printing, **Fleet System**, and more!

☛ Programming tutorials — Our *Basic BASIC* column is introducing many readers for the first time to BASIC programming!

☛ Our annual public domain issue reviews the available software in the public domain and passes the best on to you!

☛ Our annual *Rarities* issue lists all sources of **commodore** equipment so you can find that program or piece of hardware that you've been looking for!

☛ Type-in programs and more type-in programs!

☛ Information on
•telecommunicating
•music on your **commodore**
•printing
•memory management
... AND MORE!!!

Check out these savings!

As much as 49% off the cover price of \$2.95! You can't afford not to subscribe! And don't forget the companion disk — The Spinner!
Subscribe today and save!

Become a permanent member of our *dieHard* family with a full subscription. Share with us in further exploration of your **commodore** computer!

☐ One Year
(10 issues)
\$16.97
that's 42% off
the cover price!

☐ One Year
(10 issues)
with the *Spinner*
companion disk
\$49.97

☐ Two Years
(20 issues)
\$29.97
that's 49% off
the cover price!

☐ Two Years
(20 issues)
with the *Spinner*
companion disk
\$94.97

Name _____

Address _____

City _____

☐ Payment Enclosed ☐ Bill Me

Mail to: **dieHard**
Dept. CM
PO Box 392
Boise, ID 83701-0392

Please make check or money order payable to dieHard. Idaho residents must add 5% sales tax.

Please allow 6 to 8 weeks for delivery of first issue. Make check or money order payable to *dieHard*. Idaho residents must add 5% sales tax.

dieHard 816 West Bannock Street Suite 502 Boise, Idaho 83701-5850 (208) 383-0300 Fax (208) 383-0151

Backtalk (continued from pg. 4)

now offers 9600 baud access at no additional charge. You can contact GENIE at 1-800-638-9636 for further details.

Finally, while we mentioned the Hart Cartridge in our feature, we were unaware of a source for this interface. Thanks to Marv Shelton on the Fidonet Commodore conference, we can now supply you with an address and phone number for further information on this product:

Hatronics
195 Lincoln Ave.
Montclair, NJ 07042
(201) 783-7264

Comments on Issue 4

Congratulations for another fine issue. I particularly enjoyed the accelerator article and the autoboot article. I've known the method used in creating autobooting programs, but that program is the easiest to implement so far. I do hope that the accelerator comes overseas to North America.

This is a mature market, with a lot of experienced users, [yet] you still persist in publishing lengthy articles on how to use the C64/128 computers. I would suggest that you shorten the articles in future issues, to expand other articles of more detailed and technical nature. As for the featured article, telecommunications is our only last frontier for supporting our C64/128 computers, and Ms. Moranec's article pretty much covered the whole thing. I hope that this increases support and awareness for our 8-bit computers.

I would like to add a tidbit to the glossary of telecommunication terms—the V.18 protocol. This protocol is an international proposal to standardize TTY (Tele-Typewriters for the deaf) communications. The characters are in Baudot, running in 45.5 baud for North America, and 50 baud for international communications. When [this proposal] is passed, deaf and hard-of-hearing people who use TTY's [will be able to] communicate with anyone using a V.18-equipped modem, instead of using dual-party relay services, increasing accessibility.

I'm also glad that Commodore guru Jim Butterfield will be contributing in future issues, and I eagerly look forward to his articles. Hopefully the articles will focus on the usual machine language articles that Mr. Butterfield has been doing for Gazette.

I would like to see more C128-specific articles in future issues. Again, thank you for supporting my C64/128 computer, and [I'm] looking forward to another issue of Commodore World.

Sincerely,
Todd Elliott

Thanks for your information concerning the V.18 protocol. I'm sure that a number of our readers know someone who is hearing-impaired, and will be delighted to know that steps are being made to improve our ability to communicate with those individuals.

Turning to your comments on our articles for newer users, we feel these are important. Certainly you're correct in stating that the Commodore market is a "mature" one, but I talk with many new users weekly. Millions of Commodore 64's and 128's were produced world-wide; while I'm sure many have fallen into disrepair, many others are sitting in closets, attics and basements around the world—just waiting for a new user to come along. Some find their way into rummage sales, some are passed on to children, friends or relatives. Many of these new users have no manuals, and no books from which to learn. It's our responsibility at Commodore World to help these new users so that they too can eventually know their computers as well as you and I.

Deleting Lines

I have a Commodore 64 and have a program which is used to store all my music records. As I purchase new ones, I would like to delete certain lines and replace them later. I recently was given a couple of dozen records, and would like to eliminate about 50 lines.

I recently saw a program in dieHard which was as follows:

```
FOR I= 000 TO 000 STEP 1:PRINT I:NEXT I
```

I have tried this program several times. All it does is print the numbers to be eliminated, but when it finishes they are all still in the program. I would appreciate any help you may be able to give. Thank you.

J. F. Withers

Not too tough. That program will only print the lines as you indicated. You need to adjust those zero's and the ? so that you get approximately twenty of the correct numbers at one time. Cursor up to these line numbers and press RETURN on each of them to delete the lines.

Mad Man Update

Hints on using your new Compression Kit 94:

- Install the C-Kit on your CMD RAMLink or HD drive for improved performance. The C-Kit doesn't need to ask for the program disk and is able to load routines much faster when loaded on these devices.
- Let RamTest run overnight (with monitor off) to check for potentially "flakey" RAM conditions.
- Use Archiver whenever possible; Boas should be used only for GEOS and other unusual file types. Use Filemaster rather than Procopy when possible, too.
- BBS operators: Use Decomper instead of Self-dissolving archives to save space on your BBS. The Decomper is friendlier to use and avoids repeating code. The C-Kit '94 has a new decomper which appears much more like the rest of the C-Kit.
- Go ahead and use all your RAM. The C-Kit will allow simultaneous operation of VDC, DACC partitions, and 17xx expansion devices.
- Selection of RAM devices is automatic. To change default selections, go into the settings menu.
- Don't use SWAP buttons. Swapping drive numbers is unnecessary in the C-Kit and may confuse you. Done after drive selections are made, it may even confuse the C-Kit.
- Use the current version of the C-Kit. The C-Kit '94 includes many improvements over the previous version, including new routines. If you don't have it, order now!

Other News

This is expected to be the last release of the C-Kit. We have no new utilities, additions, or changes currently being considered.

With the completion of the C-Kit '94, attention can again be focussed upon the distribution of Messiah III - Nemesis. This is great news for all you die-hard gamers. We will keep you posted.

More information will be available after our next formal meeting. The last formal meeting was held on September 18, 1993 in Whettrill Canyon. All agenda items have been completed since then.

- Ryan Todd Vander Stoep
Mad Man Quality

COLOR 64 BBS-V8.0

Easy-to-use • Compatible • Fully Configurable

- Supports 300 - 38,400 baud
- Supports CMD Devices, LTK & ICT Drives, REU's, IEEE Drives
- Punter and Xmodem Protocols
- MCI and ANSI graphics
- Built-in networking & Terminal program with phone book
- ... and much, much more.

Pricing and shipping:

Color64 v8.0 (4 Disk Set) \$65.00 Shipping via US Mail: Add \$2.00 (Surface), \$3.00 (Air), \$4.00 (Priority), \$15.00 (Express), \$5.00 (Canadian)

For more information please contact Fred Ogle at:

Mailing: Fred Ogle, P.O. Box 35427, Dept. CW, Dundalk, MD 21222-7427
 GENie: F.Ogle USENET/INET: F.OGLE@GENIE.GEIS.COM
 SONIC TEMPLE BBS: 410-285-0428 Ask the SYSOP for details

Harvey and Associates (307) 742-3275

JUST A FEW 128D'S LEFT

65 Double sided GEOS Picture Disks \$65.00
 32 Double sided Stereo SID disks \$35.00

C128 Software!

Maidstone Quest \$19.95
 Master Paint \$19.95

MASTERCARD AND VISA ACCEPTED

Shipping and C.O.D. Extra

1409 Mill Street Laramie, Wyoming 82070

CEE-64- ALIVE!



THE FRIENDLY
DISK MAGAZINE
FOR YOUR C64
128 & PLUS/4

NEWS PROGRAMS
TIPS UPGRADES

P.O. BOX 232115
SACRAMENTO, CA 95823

HAVE REVIEWS IN COMPUTE'S
GAZETTE AND OVER 100 USER
GROUP NEWSLETTERS

ARTICLES AND REVIEWS FROM AROUND THE WORLD

VOLUME 1/1992...\$20 5 DISK SET

VOLUME 2/1993...\$25 6 DISK SET

VOLUME 3/1994...\$30 6 ISSUES 12 DISKS

DEMO ISSUE...\$ 3

THE BEST USER GROUP DISCOUNT OF ANY DISK MAGAZINE

OUR OWN SUPPORT BBS WITH OVER 2,000 FILES FOR YOU TO DOWNLOAD. CALL 1-916-395-9733 AT 300 BAUD TO TO 14,400 BAUD. SUBSCRIBERS HAVE ACCESS TO BOTH INTERNET AND FIDONET MESSAGE AREAS FOR THE 64/128. OVER 150 NEW MESSAGES DAILY.

SOON TO COME: *** CEE-64 ALIVE! PRESENTS ***
 THE NORTH AMERICAN EDITION OF
 COMMODORE NETWORK OF AUSTRALIA



The Phoenix Network

Rising Up From the Ashes

Providing Online Computer Entertainment and Services To The Nation



WHO WE ARE

Kat Tate/Mystique - Dir. Online Operations
 Glen Doty/Phoenix1 - Chief Engineer
 Al Mohring/Alinmin - Comptroller

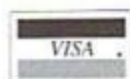
OUR GOAL

To provide a place where **ALL** computer users can meet in a congenial atmosphere, play games, share information, and generally have fun.

OUR POLICY

So long as we have a single user of **ANY** type of computer online, we will provide that user with all the support and information that we possibly can!

The Phoenix Network
P.O. Box 120093
New Brighton, MN 55112
800-869-1155 Voice



WHAT WE OFFER

- \$4.50/hour No monthly fee (Non-Primetime rates 6pm-7am)
- Visa & Mastercard Accepted
- Separate Adult & Family Areas
- Positive Proof of age required
- **FREE** Internet Access
- Shareware/Freeware Libraries for: Commodore, Amiga, PC, Mac
- **BEST** Live Action Trivia Games Around
- Over 100 Special Interest Forum Areas
- Ask about creating a Forum Area for your own group!
- **TRADEWARS 2002** Play the hottest new BBS game. Fully Commodore compatible.
- Some of the Best & Brightest members of Q-Link! Maybe even someone you know:
 Sholom Cicada Snickers/CatsO
 KellyM8 DC Star Kcorb
 MsOgeny She Elf Sir Fitz
 Mystique Lt Worf JuliaJ
- Plus many many more! Join us! Meet some old friends and make new ones too!

HOW TO JOIN

The Phoenix Network can be accessed through your local Sprint/Telenet phone number. If you are unfamiliar with Sprint, call us toll-free for full sign-on instructions:

1-800-869-1155

If you are familiar with Sprint access, do the following:

1. Have your credit card ready
 Full access is not granted
 Unless you provide credit info.
2. At the CONNECT type in the following depending on your baud rate:
 300/1200: D <return> D <return>
 2400 baud: @D <return>
 (Use uppercase [shifted] D's)
3. At Terminal = type: D1
4. At the @ sign type
C FYREBIRD
5. Follow sign-on instructions for access to The Phoenix.

ON THE HORIZON

COMMODORE AND COMPUTER INDUSTRY NEWS

GEOS Fax Software Announced

Maurice Randall of Click Here Software, and author of geoSHELL has recently announced that he is developing fax software for use with GEOS 64 and/or 128. The new program, named geoFAX, is slated for a January '95 release, and is tentatively priced at \$39.95. geoFAX will offer the ability to **transmit and receive faxes at up to 9600 baud**, using a fax modem attached to your system via SwiftLink. Received faxes can be sent directly to your printer, or can be saved as either a fax or geoPaint file. The software allows transmission of either geoPaint or fax format files. Other features are under consideration for both the release version, and later updates.

CKit 94 Arrives

After a few minor delays, Mad Man Software's CKit 94, the latest version of their compression backup program, **began shipping in mid-November**. The new version offers expanded features, an advanced 'PYTHON' compression module, and **now supports the use of RAM expansion devices** such as Commodore REU's and CMD's RAMLink. CKit 94 is priced at \$39.95, and upgrades are available to previous owners for \$9.95. Include shipping of \$5.00 (US/Canada), or \$10.00 (foreign). *Mad Man Software, 1400 East College Drive, Cheyenne WY 82007; (307) 632-1178.*

New Products from Micro Applications & Appliances

Micro Applications and Appliances is happy to announce two new software packages for the Commodore 64. **1581 Expressway** is a menu-driven utility that **simplifies the creation of partitions** on Commodore 1581 drives or Creative Micro Designs devices that support 1581-emulation partitions. The price of *1581 Expressway* is \$5.00 plus \$2.00 for shipping and handling.

Tag! You're It! is a menu-driven application for the creation of disk labels and requires an Epson-compatible or similar printer to operate. The price of *Tag! You're It!* is \$10.00 plus \$2.00 shipping and handling.

Both programs come with full, detailed instructions in an unformatted PETASCII sequential file. *Gary Noakes, Micro Applications & Appliances, 6417 Hawthorne Street, Landover MD 20785-1711.*

Commodore CEE Software

Commodore CEE, previously CEE-64 Alive!, has announced a number of additions to their software product line in recent weeks. Their complete collection now consists of two GEOS collections (**GEOMETRIX COLLECTION** and **GEOMANIACS COLLECTION 1**), the **ALIVE CLIPART COLLECTION 1** (for the Fun Graphics Machine), **128 COLLECTION 1** (for native 128 mode), **128 COLLECTION 2** (for CP/M mode), two **AUSTRALIAN PD WORD ADVENTURE GAMES** collections (1 & 2), four **PLUS/4** collections (1 through 4), **HAM PROGRAMS FOR THE 64**, **PROGRAM DOCUMENTATION FILES**, three collections of **GAME DOCUMENTS/HINTS/CHEATS** (1 through 3), **C64 COLLECTION**, **DEMO**

MAKERS UTILITIES, **CADPIC PROGRAMS: PAINTPIC & PRINTPIC**, **GEOPROGRAMMER HELP**, **VIDEO SHOP**, and eight **text adventure collections** written by Dorothy Willard. In addition, Commodore CEE offers the complete line of **Fun Graphics Machine** products, and Jim Hehl's **PROGRAMMER'S CROSS REFERENCE GUIDE**.

While we wouldn't normally list all of the products available from a particular source in this news column, we really feel that this is a **vast resource** that our readers would want to know about. Most of the collections listed consist of numerous disks, with some having as many as 40 disk sides. For prices and more information on these products, write to: *Jack Vander White, Commodore CEE, P.O. Box 232115, Sacramento CA 95823.*

Be Careful Who You Deal With

It has come to our attention that one of our **previous advertisers** has apparently **not been delivering as advertised**. Several of our readers have complained to us that **Pages Software Group**, who advertised the **PageArt** software in Commodore World Issues 1 through 4, had cashed their checks but had not forwarded the product. We were initially led to believe that PSG was experiencing normal delays in finishing the product, and that all orders would be properly filled. However, we continued to receive complaints, and upon trying to contact PSG for further comment, we found that their **phone number had been disconnected**. We apologize for our part in bringing PSG's advertising to our readers, but it's difficult for us to determine the business practices of each advertiser in our magazine. *Commodore World* is looking into what can be done to avoid this in the future, but we advise our readers to **use caution when dealing with companies you're not familiar with**. Try ordering C.O.D., or check around to **see if other users have had any experience with the company**. Where new products are concerned, **write the company before sending any money and ask about the status of the product**.

Compute Gazette To Cease Publication

Latest word is that **Gazette will cease publication in January**, with their February issue being the last. Whether or not this disk-based publication would be able to continue came into contention several weeks ago when the paper-based MS-DOS-oriented *Compute Magazine* was sold. The *Gazette* wasn't part of that deal, but many questioned how long it would be able to continue. Reportedly, **negotiations are underway to transfer credit for remaining subscriptions** to another Commodore-related publication.

More Suppliers Bid Farewell

In recent weeks we've been seeing yet another exodus of suppliers from the Commodore market. The new list of those **bidding us farewell** includes **Tenex**, and **R & K Computers**. Tenex, the mail-order wing of computer products distributor Microsphere, has been openly closing out products

for several weeks, and recently announced that they would cease all operations by year's end. **Microsphere** will continue to operate, but **will no longer do business as a distributor** of Commodore and Amiga products.

It has also been reported to us that the new number we published for **RIO** a couple of issues ago is no longer in service, leading us to believe that they too are **no longer in business**. We'll attempt to get some verification one way or the other for our next issue.

Commodore World - 64'er Agreement

Commodore World has recently reached a **cross-publishing agreement with 64'er Magazine**, a German publication produced by M&T Publishing. This agreement gives each of the two magazines the ability to **publish translated articles** from the other. Look for articles from *64'er* in upcoming issues of *Commodore World*!

CMD Update

Another new CMD product should be hitting the market as you read this. Creative Micro Designs recently announced that they would release a new **3-slot cartridge port expander board**, dubbed the **EX-3**. This is to replace the 2+1 expander board which CMD purchased from Skyles Electric Works earlier in the year. The EX-3 offers three upright (vertical) ports with independent switching of +5 VDC and control signals. Other features include a reset switch and address jumpers for swapping I/O1 and I/O2 on the center port. Tentative retail price has been set at \$34.95.

Meanwhile, CMD has added number of other products to their line, brought back some discontinued products, and lowered prices on some of their HD Series drives. Among the **new additions** to CMD's product line is

the **Buddy Assembler** for the 64/128, priced at \$39.00. Other items include the Handyscanner, video digitizer, and associated products from **Skanntronik**, a German company that manufactures a wide range of hardware products for the European Commodore market. CMD hopes to have these products in stock by Christmas. CMD has also started producing the **Official GEOS Programmer's Reference Guide**, through an agreement previously reached with Geoworks.

Returning to the CMD lineup are the **SID Symphony stereo cartridge**, now priced at \$44.95. CMD cited rising costs in obtaining SID chips, and the low volume which caused this product to be discontinued previously as the reasons for the increased retail price.

Also returning to the CMD line for a limited time is the **CMD HD-20 hard drive**, at an **all-time low price of \$299.00**. This model had been discontinued due to a lack of new 20 MB hard drive mechanisms in distribution, since the hard drive market has been driven to the increasingly larger mechanisms required by other computer platforms. CMD has recently located supplies of **2.5" Conner mechanisms** originally intended for Apple's Powerbook portable computers to use in the HD-20, and claims that these new models operate **faster, quieter, and cooler** than previous versions. With these drives now selling at **half the price of the original HD-20**, CMD hopes to capture a segment of the market that was previously unable to afford hard drives for their Commodore.

Finally, CMD has recently purchased a **large inventory of Commodore equipment**, including both **new and refurbished Commodore 64's, 64c's, 1541 disk drives, and 1802 monitors**. All Commodore computers and disk drives sold by CMD come with **JiffyDOS pre-installed**. *Creative Micro Designs, Inc., P.O. Box 646, East Longmeadow MA 01028-0646. (413) 525-0023 (information), (800) 638-3263 (orders), (413) 525-0147 (fax).*



No kidding. Call **1-800-831-2694** now or mail your valuable **FREE SOFTWARE CERTIFICATE**, and we'll send you a **FREE** issue of **LOADSTAR**®, the Commodore® software subscription. That way, you can explore our revolutionary "subscribe-to-a-disk-of-software" concept for yourself!

Each monthly issue contains 7-10 programs and features on two 5.25" disks or one 3.5" disk. Imagine getting features like these on every issue:

- Utilities •Puzzles •Games
- Applications •Tutorials •Graphics
- Music •Reviews •and more!

CJH001-2/94

FREE SOFTWARE CERTIFICATE

Call now or mail in this **FREE SOFTWARE CERTIFICATE**, and we'll send you a **FREE** issue of **LOADSTAR**, the Commodore software subscription.

Call 1-800-831-2694 or 1-318-221-8718
for fastest service!

If you like your **FREE** issue, you can complete a 3-month trial subscription with two more issues for **just \$19.95***. Since your first issue is **FREE**, you'll save **1/3 off** the regular 3-month subscription price of \$29.95. When you subscribe, you'll receive a **FREE Special Bonus Disk** of some of our most popular programs. You'll also have the option to subscribe for a longer term and save more. Whether or not you subscribe, your first issue is **FREE**.

Name: _____

Address: _____

City: _____ State/Province: _____

Country: _____ Zip/Mail Code: _____

Day Phone #: (____) _____

Check disk format:

☐ 3.5" ☐ 5.25"

CWL034

* In Canada \$23.30 (regularly \$34.95). Offer available in U. S. and Canada only. International-call for information. Allow 4-6 weeks for delivery.

Softdisk Publishing • P.O. Box 30008 • Shreveport, LA 71130-0008 USA • 1-800-831-2694 or 1-318-221-8718

THE CONNECTION

NEWS FROM COMMODORE-RELATED VENDORS AND PUBLISHERS



CLEANING OUT THE ATTIC

You've seen the ad for *THE COMPLEAT WALT*, a collection of every picture Walt Harned has had published on LOADSTAR over the past ten years. Maybe you've seen the ad for *THE COMPLEAT DAVE*, all the music that Dave Marquis has had published on LOADSTAR? *THE COMPLEAT ROGER* (all of Roger Norton's educational quizzes), *THE COMPLEAT JOHNNY* (Johnny Harris' terrific games) and *THE COMPLEAT KNEES* (nuff said) are next in line for publication by LOADSTAR for \$20 apiece. Where do all of these COMPLEAT thingies come from? And why do we insist on spelling "compleat" that way?

LOADSTAR is cleaning out its attic. In 10+ years of publishing the best "homegrown" programs we could find we've amassed a huge number of programs. We sell back issues but we realize that it's an iffy situation buying a whole issue when there may be only one or two programs on the issue that are wanted. Putting together the COMPLEAT disks seemed to me to be the best way to revive worthy old programs.

So I spent more than a few evenings gathering together all of Walt's, Dave's and Roger's files, upgrading them so they would work on today's multi-drive CMD-type systems. It wasn't easy, but since I

had the source codes for everything, it was actually kind of fun.

We're lucky; our attic is in order. Everything is nicely filed away on 125 or so "issues" with paperwork and copyrights intact. Other companies, who may have equally impressive attics, probably haven't kept up as well as we have. CMD bought all the RUN programs but I can only imagine the nightmare involved in cataloging and getting those programs upgraded for the 90s. But then CMD has always seemed to pull off things I thought were impossible.

But what about all the other attics? Just who does own the copyright to *Lode-Runner*, my all-time favorite game? Is there any way that it can be revived for those poor souls who didn't get into C-64/128s until recently? Remember *Fix-It?* *Worms?* What about the 21-second backup program that James Cantrill has been trying to backup for the past year or so?

People write to LOADSTAR thinking that we have inroads into all the nether regions of Commodore software and that all we have to do is pick up a phone and start heads rolling. Unfortunately, I can't even get Jeff Jones' head to roll. But if we all dug through our attics for our favorite old program, then wrote to the address on it (requesting forwarding if possible), maybe whoever owns the rights will get the message that they could make a lot of diehard Commodoreans happy.

If they don't want to release their program into the public domain, have them call LOADSTAR or CMD.

I'm sure we could make them an offer for their refuse.

And about that "compleat" spelling. We just did that to get a rise out of Doug Cotton, well-known stickler for proper spelling. It sort of caught on.

- Fender Tucker
Editor, LoadStar



COMMODORE CEE?

Over the last three years the name CEE-64 ALIVE! has become very well known in the Commodore field. The name does reflect the attitude that the 64 is still alive and will be for a long time to come. The problem with it is that for the last year we have included coverage for the 128, PLUS/4, and other Commodore computers. That, and some changes in our business make it necessary for me to start over at the beginning of 1995 with a new disk magazine with a new Name.

The new magazine will be called COMMODORE CEE. It will be two disks per issue and there will be six issues per year. Sound familiar? It will have a new menu system that Jim Hehl and I will be working on over the next few months. I intend to continue all of the little columns of tips gathered from around the world via telecommunication. I will continue my bulletin board at the same phone number, but under the

name of the new magazine. It will continue to have the latest and greatest files for your computers.

The major changes will be in the ownership and editing of the new magazine. Gaelyne is leaving for Australia. When she returns she will be writing for many Commodore magazines, maybe even sometimes for us. Who knows?

At present I will edit the final two issues of CEE-64 ALIVE! If I am on time, and I'd better be, they will be out at the end of October and sometime in December. I am about halfway through work on issue number 5 right now. I will also be publishing the North American Edition of *Commodore Network* of Australia. Subscription rates for it will be announced in the next issue of *Commodore World* and the final issue of CEE-64 ALIVE!

At present I am busy working on compendium issues of the first couple of years of *Commodore Network* for U.S. release. There are also about three other books in the works that should all be out by March of next year or sooner. All are in the Commodore 8-bit field.

As you can see from all of the above, the publishing business is growing and I will be quite busy for the next six months. Gee... *Commodore Business Machines*, the company, maybe dead, but there's a lot of life left in the great computers they made. And there's a lot of life left in the magazines that support Commodore users.

- Jack Vander White
Publisher, CEE-64 Alive!

dieHard

The dieHard Letter

Well, the Holiday Season is upon us. There's nothing like waking up, thinking it's the middle of the night, only to glance at the clock and realize I'm actually fifteen minutes late!

I love working when it's dark outside, even when it's really not that early, or late, as the case may be. There's something about working (or playing for that matter) by the glow of my monitor. A cup of hot chocolate, my woolies, and my favorite game on the screen. The quiet of the morning broken by the sound of Pacman, or Antony's giggle as he makes a clown face on the screen.

Most everyone knows that I use GEOS every now and then. Actually, I use it every day. Most of my geoTips come from this everyday use. So, I thought I'd share a tip with the readers of *Commodore World*.

I use many different fonts for headlines and titles. There are three or four that I use all the time: *Roma*, *Barrows*, *Commodore*, and sometimes *Cory*. I have these, as well as others used for headlines and such on my RAMLink along with *geoWrite*, *geoPublish*, and so forth. But the fonts often wind up in a different order. This is no big deal, unless I want to go back to an older document that uses different fonts for headlines.

Normally, I'd move the headline fonts over to the RAMLink and sift through the files to find *Roma*, *Barrows* and the others. But there is an easier way.

Now, I simply open the RAMLink to page one. Press **C=S** to insert a page. (I remember this short cut as <S>tick it in; **C=T** is <T>ake it out.) I then select all the fonts from the disk containing the files I am about to edit. This is usually a 1581 disk or my hard drive. <f2> moves them to the second drive (RAMLink). Or in GEOS64, I just move them over to the RAMLink as a ghost icon. I purposely select all of the fonts,

including the ones already on the RAMLink. This way, if *Roma* is the 7th font on the RAMLink, it will automatically move to the first available space, which is on the new page 2. I know this because page 1 is always full with system files. *Roma* will start to copy, but before it does, the system will ask me if I wish to replace the file since it already exists on the RAMLink. I respond with yes. The old *Roma* is scratched and the new one is moved into page 2 since that is the first available space.

If I didn't resave *Roma* while it was the 7th font, any fonts moved over to the RAMLink might wind up before the *Roma*, making it inaccessible from any applications, since it would become the 8th font, or the 9th font and so forth. Normally, GEOS applications can only access the first 7 fonts on a disk. *geoPubLaser* doesn't care, as long as the font is on the disk. It could be the 15th font for all it cares. This gives you a greater number of fonts in printout and thus greater versatility. Editing the document, however, becomes a challenge. Not having the font available will sometimes mess up the text rippling.

Enough GEOS! I'd like to introduce the SOS. The Spinner now has an operating system. It will work on most **commodores** with a wide range of setups, including fast loaders. It gives the reader access to all the text files on disk, and loads the program menus for the various **commodores**. It isn't capable of autoloading PET/CBM programs yet, nor does it run off of an unexpanded VIC20.

If, however, you manage to get the SOS to load in your VIC20, it will load the VIC20's custom operating system, which has a new face thanks to Ernest Barkman. He just recently purchased a VIC20 and has already turned out some really cool stuff for it. So, you just might want to check out the latest Spinner!

Until next time — Happy Holidays!

- Brian L. Crosthwaite
Editor, dieHard

FUN GRAPHICS MACHINE

Making FGM Forms

Forms can take many shapes; score cards, mileage cards, calendars, to-do checklists, report cards, order forms, etc. Form making is one of FGM's strongest fortes, and is also fun and pretty easy.

Linked screens are usually used when making forms, since forms tend to be larger than one screen (refer to CW Issue 4 and your manual for help with linked screens). The following example might best be tried on an unlinked screen until you understand it.

Forms are mainly constructed with lines; horizontal, vertical, and corners. The Commodore character set has a fair variety of lines available. Load up FGM (CREATOR) and we'll explore this and see how easy it is.

First, clear the screen(s). Enter TEXT mode (T), and press **(CTRL) 5** to select character set five. This character set lets you use upper case characters and the graphic symbols shown on the keys. Position the cursor in the upper left area of the screen, and we're ready to go.

Press **C=A**; this will give you the upper left corner. Press **(SHIFT) C**; this will give you a horizontal line. Continue holding **(SHIFT) C** until the line goes about half-way across the screen. Now press **C=S**; this gives you the upper right corner.

Move back to the left side and below the corner and press **(SHIFT) B**. This makes a vertical line. You can make the line longer by moving it down and repeating, by making the cursor longer (**(CTRL) V**), or by changing typing direction to up/down with **(CTRL) ↑**. Place a vertical line under the right corner too.

If you changed cursor size or direction, reset by pressing **(CTRL) N**. Now press **C=Z** for the lower left corner, use **(SHIFT) C** again for a horizontal line, then finish with **C=X** for the lower right corner. Voila, we've made a box!

Now move the cursor over the lower left corner and press **C=Q** to replace it; this gives us a vertical "connecting line" for another box below. Similarly, move the cursor over the lower right corner and replace it with **C=W**.

Let's add a COLUMN to this box (split the box). Move the cursor somewhere on the upper horizontal line and press **C=R**. Move below the above and put a vertical line (**(SHIFT) B**), then move over (covering) the lower horizontal line and press **C=+**.

Now we're going to DUPLICATE the first box to make additional boxes going down the screen. Press **(CTRL) J** for ADJUST mode and a horizontal cursor will appear. Press **+** once to make it two rows high. Position it one row below the top of the box (don't include the upper corners) and press **=**. This captures that area into a buffer.

Now move the ADJUST bar so that it's just below the "connecting lines" and press **O** to Overlay it. We should now have two boxes, with connectors for another box. Move the bar below again and repeat as you wish. When you're ready for the bottom, replace the connecting lines that are dangling below with the bottom corners (**C=Z** and **C=X**), and **C=E** for the column line. Note: If screens were linked we'd have to duplicate *both* screens.

These key combinations may seem confusing; but the symbols are all shown on the keys, and are grouped together fairly well. Take a look at the **QWER**, **AS**, **ZX**, and **CB** keys on the left of the keyboard. The other key used was **(SHIFT) +**, which looks like a big plus.

Try out the other keys too; **(SHIFT) U**, **I**, **J**, **K** offer rounded corners. The arrows can be used. Use **(CTRL) R** to reverse the lines. EOR (pg. 125) offers interesting effects, and many other keys can be used for creating character graphics.

Happy FGM'ing!

- Ron C. Hackley
Co-Owner, FGM Connection



TOP TIPS

A HOST OF HELPFUL HINTS FOR GEOS

GEOS & 24-pin Printers

Since almost every 24-pin printer produced today can emulate the Epson LQ-series printers, you can use the Epson LQ-1500 printer driver for just about any of these printers. This driver was supplied on the GEOS 128 v2.0 disk, but was never supplied with GEOS 64 v2.0. You can download this driver from a number of on-line services, or order the GEODRIVERS1 disk from CMD to obtain it. For maximum speed, use a GC version of this driver with a geoCable or similar parallel printer cable. For 24-pin color printers, use the Epson24PinColor shell printer driver by G. H. Wells. This, too, is found on the on-line services, as well as on the GEODRIVERS1 disk.

GEOS & Ink-Jet Printers

The best ink-jet printers to use with GEOS are the Cannon BJ-series printers. This is because the Cannon printers have superb Epson 24-pin printer emulation, allowing you to use the driver mentioned above for 24-pin printers. In fact, the emulation is so good that these printers will even work with CMD's Perfect Print LQ. Again, for the best speed, use the GC version of the driver with a geoCable or similar parallel print cable.

Avoid Epson and HP ink-jet printers—they have poor emulations, and the latter will not work with software other than GEOS.

GEOS & Laser Printers

GEOS generally requires laser printers that can



understand Postscript commands. These printers will give you fantastic text output, but graphics will generally look 'blocky'. The laser printer drivers supplied with GEOS, and the geoPubLaser program supplied with geoPublish require an RS-232 printer interface that hooks up to your user port. These interfaces are nearly impossible to find anymore, even in the used market. There is a solution to this problem, but there are also some tricks involved with it. Here goes:

If your laser printer is equipped with a centronics parallel port, you can use a geoCable to hook up your printer. If your printer is an HP, or some other type of printer that uses a Postscript cartridge (instead of having Postscript built-in), make sure that the cartridge will allow you to use the Centronics port when using Postscript—some cartridges won't. You can generally get a cartridge that will work for such printers by specifying that you want an IBM Postscript cartridge instead of an Apple Postscript cartridge.

Now, to use the printer with a geoCable, you'll need some alternate drivers; likewise, you'll need some patches for geoPubLaser. These drivers and patches come on the Collette Utilities disk from CMD. You'll also need to have geoPubLaser v1.8 to use these patches if you have the two-disk version of geoPublish. Users with the single-disk version of geoPublish must use the geoPubLaser version that is dated 03-10-88. These may also be obtained from CMD.

Laser vs. Ink-Jet

If you're considering buying a laser printer to use with GEOS, you might consider getting an ink-jet printer instead.

Why? Well, not only are they less expensive to buy, but you'll also get better graphics resolution from an ink-jet than you will from a laser. The ink-jet is also more likely to work with your non-GEOS applications. Lasers do a great job with text under GEOS—but for most other situations in and out of GEOS, an ink-jet with a good emulation mode (such as the Cannon BJ-series) can do a better all-around job.

Changing Input Drivers

Most GEOS users know that if you press the 'I' key while holding down the Commodore key (C=), GEOS will bring up a selection box that lets you change input drivers. Some GEOS users, however, don't realize that you can then use the cursor keys on the keyboard to move the highlight bar to the name of the desired input driver. Two quick presses of the **RETURN** key at this point will load the selected driver, and exit to deskTop.

Trashing Files From Master Disks

GEOS won't let you drag a file from the deskTop directly into the trash. However, if you drop the file into the border area, then pick it back up, you can then drop it in the trash.

By the way—NEVER move or trash any of the first three files on your GEOS System or Backup System disk; this invokes a protection scheme that will make that disk unbootable.

The Dissimilar Drive Bug

Okay, so you've copied all your applications and data files to your new 3.5" drive, and you're ready to fly! You locate the data file you want to work on, double-click on it and... huh? You get a message telling you that you must have a copy of the application on the same disk. You already do! GEOS doesn't like having dissimilar drives if you don't have a RAM expander. The only cure for this is to start the application first, then open the data file from within.

We Need Your Top Tips!

Each issue we'll print the very best tips we receive from our readers. Send your tips on using and programming your Commodore 64 or 128 to:

CW Top Tips
c/o Creative Micro Designs, Inc.
P.O. Box 646
East Longmeadow, MA 01028-0646

FOR THE C64 AND C128 IN 64 MODE **Only \$24.95**

Fun Graphics Machine

FUN GRAPHICS MACHINE (FGM) IS AN "ALL-IN-ONE" GRAPHICS PROGRAM FOR THE C-64. WHAT CAN BE CREATED WITH FGM IS ONLY LIMITED BY YOUR IMAGINATION. JUST A FEW EXAMPLES:



SUPPORTS ALL CMO DRIVES



WORKS WITH 1541, 1571 & 1581 DRIVES

SUPPORTS MULTIPLE DRIVES

THIS AD CREATED WITH FGM

FUN GRAPHICS MACHINE SUPPORTS IMPORTING GRAPHICS AND HI-RES SCREENS FROM MANY POPULAR PROGRAMS INCLUDING:



SUPPORTS MULTIPLE DRIVES



THIS AD CREATED WITH FGM

GEOS SCREENS CAN BE CAPTURED SIMPLY BY RESETTING COMPUTER THEN LOADING THE FUN GRAPHICS MACHINE.

FUN GRAPHICS MACHINE FULL KEYBOARD OVERLAY ---\$3.50 EA
PLEASE STATE COMPUTER (C64, C128, SX-64) OR C64 IS SHIPPED

FUN GRAPHICS MACHINE DEMO DISK THIS IS A PREVIEW OF WHAT FUN GRAPHICS MACHINE IS ALL ABOUT ---\$2.00

→ FOLLOWING DISKS REQUIRE THE FULL BLOWN VERSION OF FGM →

FGM FONTS OVER 90 FONTS IN FGM FORMAT ---\$5.00
FGM CLIP ART VOL.1 OVER 200 EXCELLENT GRAPHICS ---\$8.00
FGM CLIP ART VOL.2 OVER 150 EXCELLENT GRAPHICS ---\$5.00
FGM CLIP ART VOL.3 OVER 125 GRAPHICS, THIS DISK INCLUDES CLIP ART FOR VIEWING AND PRINTING FGM CLIP ART ---\$5.00
FGM GRAPHICS DISK 1 3 BLOCK P.S. STYLE GRAPHICS ---\$5.00
FGM CALENDAR TEMPLATE DAILY, WEEKLY, MONTHLY ---\$5.00
FGM OVERLAY TEMPLATE DISK MAKE FULL KEYBOARD OVERLAYS STATE COMPUTER FOR OVERLAY TEMPLATES OR C64 IS SENT ---\$5.00
FGM UPDATE DISK V6.5 UPDATES FGM V6.X TO FGM V6.5 ---\$2.00

PLEASE ADD FOR SHIPPING AND HANDLING PER ORDER ---\$3.50
FOREIGN ORDERS: FOR AIR MAIL ADD ADDITIONAL AS FOLLOWS:
 CANADA/MEXICO \$1.00, ALL OTHERS \$5.00
 U.S. FUNDS ONLY SORRY NO CHARGE CARDS

The FGM Connection, P.O. Box 2206, Roseburg, OR. 97470
 FOR MORE INFORMATION CALL 503-496-2234

Dependable Service for your Commodore!

C64, 1541, C128, or 1571: **\$15.00 PLUS PARTS**

Send computer (& power supply) or disk drive with name, address, phone, & describe problem. We'll call with parts estimate. Repaired unit is returned to you via UPS. Payment can be COD, VISA, M/C, or DISCOVER.. Minimum charge for estimate only is \$10.00.

Authorized Commodore Service Center
 Since 1979

90 Day Warranty
 on all repairs.
FAST TURNAROUND

We Also Sell the Following:

Refurbished: (As Available)

C-64... \$59.95

Includes C-64 & Power Supply, (without books or TV cable)

Refurbished: (As Available)

1541.. \$69.95

Includes 1541, Power Cord, & cable (without books or disks).

Monitor Cable, 5-pin DIN to RCA jacks	\$ 5.95
Serial Cable, 6-pin DIN, 6'	9.95
Serial Cable, 6-pin DIN, 12'	12.95
Commodore Power Supply for C-64	19.95
Commodore Power Supply for C-128	39.95
Power Cord for 1541	4.95
Power Supply for 1541-II	32.50
New! CD-32, USA version	399.00

TYCOM Inc. (413) 442-9771

503 East Street, Pittsfield, MA 01201

Prices subject to change. Shipping charges will be added.

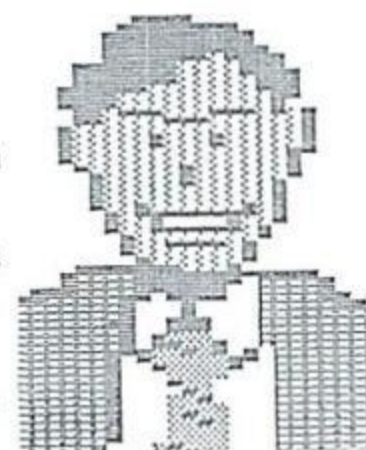
Creative Pixels Presents

A DAY IN THE LIFE OF A PREHISTORIC MAN

with your host, Salisbury Smythe, of Public Network Television

COMMODORE 64/128 IN 64 MODE

A new Public Network Television documentary describes a typical day in the life of a prehistoric man! Collect bones, save your mate, dodge dinos, and find diamonds as you spend your day as a caveman!



Send check or money order for \$19.95 to:

CREATIVE PIXELS
 P.O. Box 592
 Library, PA 15129

(C)Copyright 1994
 JC Hilly
 Productions



Creative Pixels Ltd. Presents
 A Hillyfilms Ltd. Production

THE WINGS OF CIRCE

A Tale of Myth & Legend

Commodore 64/128




Odysseus had been kidnapped and placed under a spell by an evil and powerful wizard. In order to save Odysseus, Circe was transformed into Pegasus, the flying horse!

THE WINGS OF CIRCE is a new action/adventure game for the Commodore 64. The game features bitmapped graphics and animated storytelling. Battle dragons, Hawkmen, and skeletons as you attempt to rescue Odysseus from his powerful captor! Learn the secrets of Pegasus and Medusa!

ACTION AND ADVENTURE!

Send check or money order for \$19.95

Recipient of the
 diellard magazine
 Seal of Approval.

CREATIVE PIXELS LTD.
 P.O. Box 592
 Library, PA 15129

Just For Starters

by Steve Vander Ark



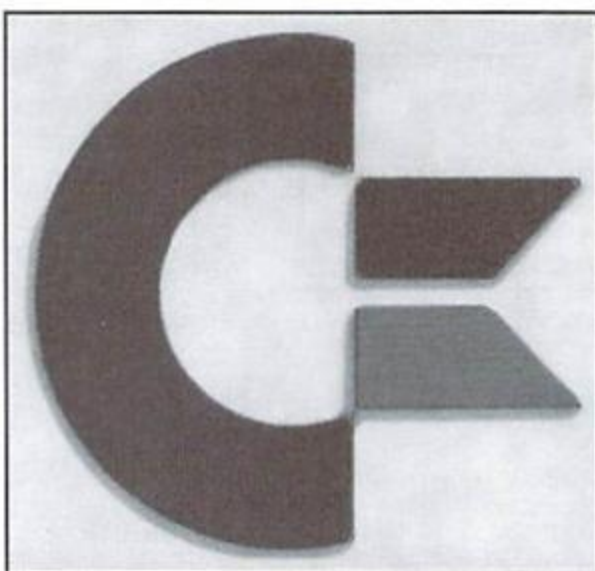
THE BASICS: TELLING YOUR COMPUTER WHAT TO DO ISN'T SO HARD

My computer can talk. It talks a lot. Constantly, as a matter of fact. That's how I began the first installment of this column, just a few short months ago. I proceeded to explain how a computer has to be able to communicate with all the various gadgets hooked up to it. It needs to get program instructions from the disk drive, send text and images to the screen, and so on. It also needs to listen. Those program instructions, for example, wouldn't do much good if the computer never heard them and processed them.

The most important component of your computer system is you, however. And if the computer can't hear what you have to say, it will be pretty much useless. At the very least, you need to tell it to start up by flipping on a switch somewhere along the line. After that, you might need to give it some kind of instructions about what to do next. You'll do this, most likely, from the keyboard, typing in some kind of message.

In that first issue I told you that your computer has a built-in language for these messages called BASIC. The commands you type in, such as `LOAD "$",8:LIST` are actually in the BASIC language. There are a series of commands, like the one I just quoted, which every Commodore user will need to know. You'll use them to load programs and prepare disks to hold information. You pretty much need these commands to do anything at all with your computer. There's no particular reason why you need to know what they actually mean; as long as you can type them correctly, you're alright.

But you know, BASIC isn't really all that complicated. You don't have to be a rocket scientist to learn how it works. (Just how smart



are rocket scientists, anyway? Must be pretty darn smart to get a figure of speech named after them. I notice nobody ever says "You don't have to be a writer for a Commodore magazine." Or an editor.)

Anyway, once you've mastered a few of the basic rules, you will find that the BASIC language can give you a surprising amount of power over your machine. You can start *really* telling it what to do. That's called programming, by the way; telling your computer what to do and when it should do it.

With BASIC you keep the computer on track, doing things in the right order, by putting a number in front of each successive instruction. The first thing you want the computer to do is given a number, say 10. Then each additional command is numbered on from there in order. Most programmers count by tens (so they have room to stick a command in between if they need to) so after 10 would come 20. This goes on until all the instructions have been given, one after

another. Since each instruction is typed on a separate line, the numbers are called line numbers. All BASIC programs on the Commodore have line numbers.

But wait a second. I've had you typing BASIC commands over the last few issues, as you may recall. But only once did I tell you to type in line numbers. What gives? Well, there are two ways to enter BASIC statements, one of which uses line numbers and the other doesn't. If you don't use a line number (called "immediate mode") the command is followed as soon as you press the "return" key.

If you want to string several of these commands together, you need to enter each one separately, one at a time. This is the way things work when you enter that command to read the directory; you type in the commands and they are carried out as soon as you press the "return" key. This is fine for simple commands that accomplish some straightforward tasks for you. But if you want to recall your list of commands to be carried out later, maybe even over and over, you'll want to number them. If you number each command, at the beginning of each line, the instructions won't be carried out until you're finished and tell it to start.

The power of this comes from the variety of commands BASIC offers. You can string commands together to do just about anything you imagine, from playing a game to drawing a picture to writing a story. Commodore's version of the BASIC language includes commands to put words on the screen, to wait until someone presses a button, to draw lines and circles, and so on. You don't have to know them all to start using

"THE MOST IMPORTANT COMPONENT OF YOUR COMPUTER SYSTEM IS YOU"

some of them, but you do need to understand how the language is put together.

Back in issue one I talked about using a BASIC command to load a program. At that point I mentioned that you'd put a comma and a number after the LOAD statement as a way of passing along a little extra information to the computer about that statement. In the case of LOAD, you would need to specify where the computer was supposed to load from.

Many commands expect tidbits of extra information when you use them; these are called "parameters," and they can be numbers, words, or combinations of letters and numbers. The rules for punctuation and spaces are fairly strict because computers are very literal-minded. They never assume or guess what you "probably" meant, they just crash.

Okay, let's try writing a simple program to start out. As we do this, you can see all these rules in action and they'll make more sense. First of all, start your computer fresh so you have that flashing cursor and the READY prompt. Now, to

start our program, type in the number 10 and follow it with a space. We'll put our first command on the line that we just started, the one with a 10 at the beginning. We'll tell our computer to write the word "HELLO" on the screen. In order to do that, we have to type in the command to send text to the screen, which is PRINT. The PRINT command can have a parameter, that being the words we want the computer to put on the screen. If we leave that parameter off, the PRINT command just make the computer skip down a line. So here's our program, along with a few notes off to the right side that you don't type in:

10 PRINT

(this will make the cursor drop one line) (so will this)

20 PRINT

30 PRINT "HELLO" (now we're telling the computer to actually write HELLO)

Notice that as we typed these lines, nothing happened. The computer hasn't actually done

anything yet, except store these numbered instructions away for us. In order to tell the computer to carry out our instructions, one my one, we need to tell it the following command (in immediate mode): RUN. Try it. Type RUN and see your computer do what you told it to do.

Now list your program by typing (in immediate mode) LIST. See where our word HELLO is located? Now use the arrow keys to move the cursor over that word and try changing it. You'll need to use the INST/DEL key to remove letters and make room for your own words. Type RUN and see if you were successful. Once you've done that, try making the computer say HELLO more than once.

Next issue we'll learn some new commands. We'll also learn how to save our programs onto a disk, which we will want to do if they get much longer. Until then, go over the things we've discussed in this issue, and take a look at the descriptions for the commands we used in your User's Guide.



WE WON'T PAY YOUR TAXES!

But **TAX MASTER** will help you compute them more QUICKLY and EASILY. Be the Master of your Income Taxes with **TAX MASTER**, now available for your 1994 Federal Income Taxes for the C-64/C-128 with single, twin, or dual disk drive and optional printer.

CHECK OUT THESE FEATURES:

✓ **LATEST** Tax laws are covered.

✓ **FORMS** 1040, 4562, and Schedules A, B, C, D, E, & F.

✓ **TRANSFERS** numbers between forms.

✓ **PERFORMS** all arithmetic CORRECTLY.



✓ **EASY CHANGE** of any entry, with automatic RECALCULATION of the entire form.

✓ **CALCULATES** your taxes and REFUND. The Tax tables are built in.

✓ **PRINTS** the data from each form.

✓ **SAVES** all your data to disk for future changes.

✓ **CALCULATOR** function is built-in.

✓ **DISCOUNT** coupon toward next year's update is included.

TAX MASTER for 1994 Only \$32.00



FED UP WITH SYNTAX ERRORS?



HELP MASTER 64 provides Instant On-Line Help screens for all 69 BASIC commands when you need them. Takes no BASIC RAM. No interference with loading, saving, editing, or running BASIC programs.

HELP MASTER 64 . . . for Commodore 64 \$19.95

TIRED OF SWITCHING CABLES?

VIDEO MASTER 128 provides outputs for continuous 80 column color (RGBI), 80 column monochrome, and audio out. You can switch between 80 column monochrome and 40 column color for composite monitor. Use up to 4 monitors at once! Includes composite cable.

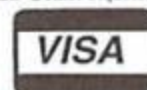
VIDEO MASTER 128 . . for Commodore 128 \$39.95

OTHER MASTER SOFTWARE ITEMS

CHIP SAVER KIT protects computer's chips from static electricity \$ 5.95
80 MONO CABLE produces 80 columns monochrome video from C128 \$ 9.00

MASTER SOFTWARE
6 Hillery Court
Randallstown, MD 21133
(410) 922-2962

ADD \$2.00 per order shipping and handling US and Canada, \$7.00 foreign. All prices in US Dollars. Canadian orders please use Canadian POSTAL money order. Maryland residents add 5% sales tax. Dealer inquiries welcome!



Foreign Exchange

By Joseph Gaudi



A KEY GEOS DEVELOPMENT HITS THE MARKET IN GERMANY

When was the last time you walked into a computer 'superstore' and asked for help with your C64/128? Just last month I visited one of these stores in downtown Innsbruck, Austria. I was looking for a deal on a replacement hard drive mechanism for my CMD HD. When the salesman asked me which kind of computer I was using, I gulped—I knew what was coming—and managed to say "Commodore."

"A 386?" he asked. "No," I replied, "it's a C128D." He walked away, muttering to himself, "No such thing as a hard drive for the C128."

I mustered up some courage and shouted after him, "I even have 4Mb of RAM in the thing, and can hook it up to a PC keyboard if I wanted to."

"No way!" he called over his shoulder, "You're dreaming!"

Now, I'm sure you're all aware of the HD and RAMLink offered by CMD; but I'll bet very few of you have ever heard of GeoKeys, brainchild of Günnter Meckes, an industrious GEOS user who hails from a Munich suburb.

Günnter became distressed with the uncomfortable C64 keyboard after long hours of working with geoWrite. Rebuilding the C128D keyboard for use with his C64 seemed to be the logical solution; but being a hardware specialist, he decided to really go for it. Thinking of the possibilities an entire PC keyboard could offer a GEOS user, Günnter went to work. After about ten months of design and testing, he introduced his invention to the German market.

The GeoKeys interface is a shade larger than CMD's HD power supply (14x10x5 cm). A ribbon cable connects the interface to the Commodore user port, and a connector is provided on the interface for hookup of any IBM-compatible AT-style keyboard. There's also a 25-pin



centronics connector on the interface for use with a printer.

The keyboard driver required to use GeoKeys is installed with the included "TestKeys" program. This program also has a dialogue box that lets you test the keyboard. You also get "InstallKeys", an autoexec file that must be copied onto your GEOS boot disk. Once everything is correctly installed, your new keyboard will automatically activate every time you boot GEOS.

The default key settings themselves offer quite a bit of comfort. The TAB key replaces CTRL-I, Shift-Lock is really a shift lock, the four cursor keys move the cursor on screen, and the special keys are all defined with geoWrite shortcuts.

GeoKeys also comes with "EditKeys", a program that lets you view and change the keyboard settings via a graphic display of the keyboard on the screen. Just click on any key you wish to edit, redefine it and save the new layout.

Other utilities provided include "ChangeKeys", a desk accessory included in the software with which you can change the layouts, and "ResetKeys" which restores the default settings.

Recent test reports in German Commodore magazines (64'er 8/94, GUP #34) gave GeoKeys excellent marks. There are, however, a few "glitches" that should be mentioned. First, GeoKeys works only with GEOS—you can't use it with any other commercial programs. The

ribbon cable (for the user port) should be longer—some users may not have the space required for the interface. There have also been reports of printing problems with the C128, which are currently being worked on.

The utilities only work in 40 column mode. Not all of the PC keys can be defined, but that's due to GEOS memory limitations. These include "Print", "Scroll", "Pause", and "NumLock".

The German CLI (Command Line Interface), which is very similar to geoShell, does have some problems with the PC keyboard. At this time we cannot report of any compatibility problems with U.S. GEOS applications—we'll have to wait until GeoKeys has been tested with the U.S. version of GEOS and its applications.

European distribution of GeoKeys has been turned over to the Geos User Club in Germany, which is selling the hardware for DM130.00 (about \$85.00). The interface comes with utility software and a thirty-page German manual, which will be translated as soon as an American distributor can be found.

Most of the above mentioned glitches should be taken care of before the product hits the U.S. market. If you simply cannot wait for an American distributor, write the Geos User Club and ask for information about shipping and payment. I saw a demonstration this past summer, and was very impressed—GeoKeys worked flawlessly and it gave those of us who have envied the PC keyboard the best of both worlds!

Contact address: Geos User Club
Xantener Str. 40
D-46286 Dorsten
Germany



USER GROUP CONNECTION

SUPPORT YOUR LOCAL USER GROUP

California

Diablo Valley Commodore User's Group
P.O. Box 27155
Concord, CA 94527

Florida

Manasota Commodore User's Group
PO Box 698
Oneco, FL 34264-6618
Sun Coast Commodore Club
c/o 7034 Mayfield Drive
Port Richey, FL 34668

Kentucky

Gold City Computer Users Group
P.O. Box 257
Fort Knox, KY 40121

Louisiana

New Orleans Commodore Klub-64/128
P.O. Box 1997
Metairie, LA 70004-1997

Ohio

Cincinnati Commodore Computer Club
5575 Pleasant Hill Rd.
Milford, OH 45150

Oklahoma

Tulsa Area Commodore User's Group
PO Box 52473
Tulsa, OK 74152-0473

New York

Northern NY Commodore Home Users Group
c/o 6 Garden St.
Pottsdam, NY 13662

Washington

Tri-City Commodore Computer Club
P.O. Box 224
Richland, WA 99352

West Virginia

Commodore Home User's Group
81 Lynwood Ave.
Wheeling, WV 26003

Wyoming

Cheyenne Assoc. of Computer Enthusiasts
P.O. Box 1733
Cheyenne, WY 82003-1733

Canada

Hamilton Commodore Users Group
P.O. Box 20202, Upper James P.O.
Hamilton, Ontario L9C-7M5
Ottawa Home Computer Club
1743 Caminiti Crescent
Orleans, Ontario K4A-1M2

New Zealand

Kapiti Commodore Users' Group
23 Weggery Dr.
Waikanae, New Zealand

Mail Groups

Meeting 64/128 Users Through the Mail
Route 7, Box 7614
Palestine, TX 75801

Attention User Groups!

Send us your group's name, contact person's name and phone number, when and where you meet, number of members, and an address where users can write to you. Please send your group info to:

CW UG Connection

c/o Creative Micro Designs, Inc.

P.O. Box 646

East Longmeadow, MA 01028-0646

CW & RUN BACK ISSUES

For years, *RUN* Magazine provided Commodore Users with a great source of information, and now CMD has given you *Commodore World*. Don't let this valuable information slip away—fill in the voids in your library now!

RUN Magazine Back Issues

Any 3 issues for \$12.00, any 6 for \$18.00,
or any 12 for only \$24.00

RMJAN88	January 1988	RMJAN89	January 1989
RMFEB88	February 1988	RMFEB89	February 1989
RMMAR88	March 1988	RMMAR89	March 1989
RMAPR88	April 1988	RMAPR89	April 1989
RMMAY88	May 1988	RMMAY89	May 1989
RMJUN88	June 1988	RMJUN89	June 1989
RMJUL88	July 1988	RMJUL89	July 1989
RMFEB89	February 1989	RMFEB90	February 1990
RMMAY89	May 1989	RMMAY90	May 1990
RMJUN89	June 1989	RMJUN90	June 1990
RMJUL89	July 1989	RMJUL90	July 1990
RMAUG89	August 1989	RMAUG90	August 1990
RMSEP89	September 1989	RMSEP90	September 1990
		RMNOV90	November 1990
		RMDEC90	December 1990
		RMJAN91	January 1991
		RMJAN92	January 1992
		RMMAR92	March/April 1992
		RMMAY92	May/June 1992
		RMJUL92	July/August 1992
		RMSEP92	September/October 1992
		RMNOV92	November/December 1992

Shipping: 3 or 6 issues - U.S. \$3.00, Canada \$5.00, Foreign \$15.00;
12 issues U.S. \$5.00; Canada \$7.00; Foreign \$20.00.

Commodore World Back Issues

\$4.95 each, or any 3 for only \$12.00

CW1-1	Volume 1, Number 1	CW1-3	Volume 1, Number 3
CW1-2	Volume 1, Number 2	CW1-4	Volume 1, Number 4

Shipping: U.S. and Canada \$2.00 per issue; Foreign \$5.00 per issue.

TO ORDER CALL 1-800-638-3263

AFFORDABLE EXPANSION

3 SLOT CARTRIDGE PORT EXPANDER

The all-new EX3 Cartridge Port Expander brings new expandability to you Commodore 64 or 128. Combine the use of compatible cartridges. Disable cartridges when not in use. Change the address the computer finds a cartridge at. Above all, avoid the constant changing of cartridges that can lead to extra wear on your cartridge port. The new CMD EX3 does all this, and does it at an affordable price.

EXPAND NOW FOR ONLY \$29.95*

CALL 1-800-638-3263



FEATURES

3 VERTICAL EXPANSION SLOTS
7 SWITCHABLE SIGNALS PER SLOT
ADDRESS REMAPPING ON SLOT 2
RESET BUTTON



*plus shipping
Creative Micro Designs, Inc., P.O. Box 646, East Longmeadow MA 01028

GEOS 101

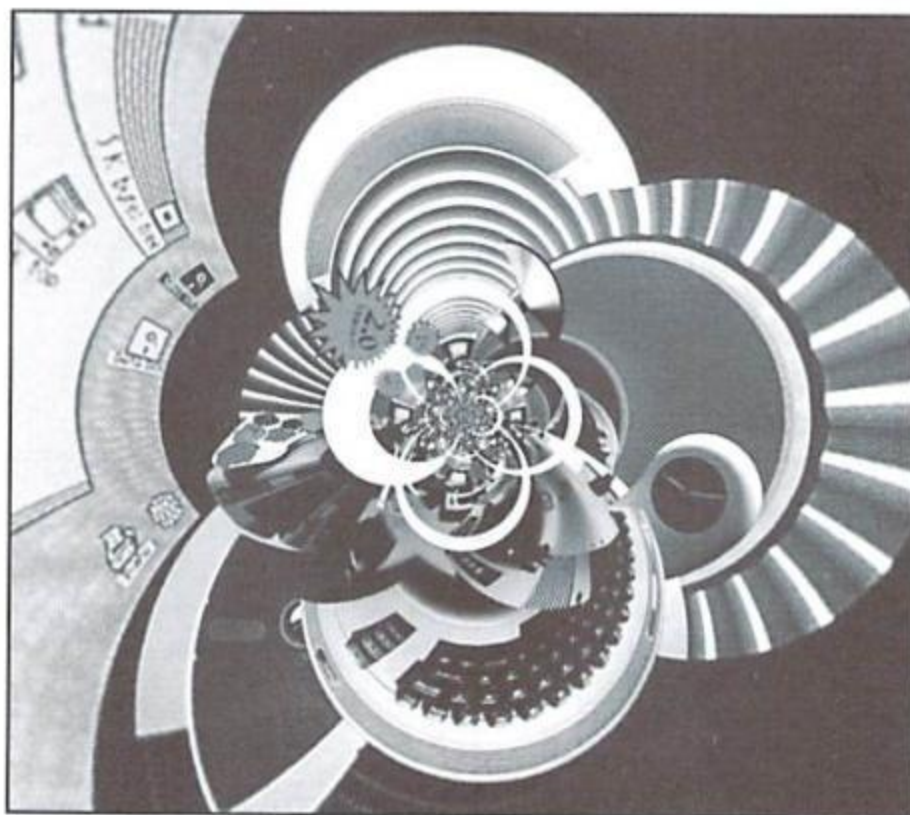
by Steve Vander Ark

PART ONE OF AN INTRODUCTORY COURSE FOR THOSE WHO HAVE NEVER
HARNESSED THE POWER OF THE GRAPHICAL USER INTERFACE

Seems like just about everyone has GEOS. Some bought it when it first came out. Others received a copy bundled with their C-64 or 1541. Everybody talks about GEOS, user's groups provide GEOS tutorials, and the GEOS areas on electronic services are among the most active. So if everyone owns it, and everyone talks about it, why doesn't everyone use it?

I can think of several good reasons. One fellow at our user's group meeting told me that he had no intention of loading a whole new operating system into his machine when there was a perfectly good one built right in. Another couple said they were intrigued by GEOS, but hadn't time to learn all of its ins and outs (like how to get their printer to work). One woman admitted she had spent hours trying to set everything up, but never could get GEOS to boot.

Even so, these same people gathered around my geoPublish demo, oohing and aahing over the ease with which I could import graphics into my desktop publishing work. But even after they had seen the system run, they couldn't believe that they could do the same. To these



**“USING GEOS IS NOT
DIFFICULT. IT'S A
REMARKABLE OPERATING
SYSTEM AND ITS
APPLICATIONS ARE SOME
OF THE MOST EXCITING
AND ADVANCED IN THE
COMMODORE WORLD”**

folks and many others, GEOS is a mystery, fascinating but elusive.

It doesn't have to be this way; using GEOS is not difficult. It's a remarkable operating system and its applications are some of the most exciting and advanced in the Commodore world.

If you've always wanted to try GEOS, this series of articles will help you. In this segment, I'll discuss the basic concepts behind GEOS. Then I'll guide you through the first time, getting GEOS up and running for you. Finally, I'll give you a tour of the GEOS universe, stopping to look at its major applications.

GEOS vs. Commodore OS

GEOS is an operating system, a set of routines that governs your computer's operation and its interaction with peripheral devices. As my friend in the user's group mentioned, there is an operating system already built into your computer. You use that operating system, the Commodore OS (Operating System), through entering commands via the BASIC interpreter that serves as the user interface to your computer. Whenever you type one of those

convoluted commands to format a disk or load a file, the BASIC interpreter examines what you have typed, then calls various routines in the Commodore OS to carry out your instructions. Disk-related commands are in turn relayed to the Commodore DOS (Disk Operating System) built into your disk drive.

GEOS provides a much more user-friendly way to get the job done. It's called a "graphical user interface," and is similar to the interface found on Macintosh computers. With it, you give disk and file commands simply by clicking on menus with a pointer, not by typing in complicated commands.

GEOS, however, is much more than an easier way to send the same old disk commands. When you boot GEOS, your computer is given a new set of rules in which the disk drive assumes a more active role in the system.

As with your computer's native operating system, in GEOS you load programs from a disk to start things off and save your work back to a disk when you're finished. Unlike BASIC and the other component parts of the Commodore OS and DOS, however, GEOS can use a file in sections, loading into memory only those portions that are needed at a given time. This allows GEOS to actually handle data files larger than the available memory in the computer! The disk drive acts almost like extra memory.

Standard Commodore program files can't be handled a little bit at a time; it must be loaded all at once, because the Commodore operating system knows of no other way to do it. But GEOS files, called VLIR files, exist on your disk as a series of separate pieces. VLIR stands for Variable-Length Indexed Records, and it's this unique file type that allows individual data files to exceed your Commodore's memory limitations.

Because the native Commodore operating system doesn't recognize this file type, you'll see VLIR files identified in your directory as USR (user-defined) files. Accordingly, the VLIR structure is unrecognizable to Commodore DOS routines, so you can't use standard file copy programs with GEOS, nor can you use the Validate command on disks containing GEOS files. [Editors Note: An exception to this rule applies when using CMD storage devices such as RAMLink, the CMD FD-2000 and FD-4000, or any of the CMD HD Series hard drives. These devices can properly validate GEOS disks and partitions using the Validate command.]

Disk Drives and RAM Units

As mentioned above, some GEOS applications, surprisingly, are larger than the amount of memory your computer has in it. A prime example

is geoPublish, which weighs in at 99K. It operates within the 64K by swapping in various sections of code as they are needed. You'll notice, for instance, that when you select some of the tools in geoPaint you have to wait for the drive to run before the tool is active. In this way, using VLIR files, your computer can do tricks that wouldn't be possible otherwise.

Because GEOS uses the disk drive as memory and active storage while you work, speed can be a problem. Every time the drive has to kick in, your computer slows to a crawl, waiting for data from the drive.

Within your computer, all of the data is retrieved electronically, with the signals traveling at nearly the speed of light. But because disk drives are mechanical, the signals are produced much more slowly while the disk spins and the drive head jumps back and forth looking for the correct block of data. GEOS enhances the drive's speed with sophisticated turbo code, but even that doesn't eliminate the delay, only shortens it.

RAM devices, on the other hand, are not mechanical drives, so the data can be accessed almost as quickly as it can from the computer's own RAM. These devices, such as the Commodore REU's or the CMD RAMLink, also help GEOS with other behind-the-scenes functions. It stands to reason, then, that loading your applications and data files into a RAM device will make GEOS run much more quickly and smoothly. In fact, the difference is astounding. Because of this, most GEOS users end up purchasing a RAM device of some kind.

Displaying GEOS

Your Commodore's OS uses several methods, called display modes, to display information on a monitor screen. The three main Commodore display modes are Text (low resolution), Multicolor (medium resolution), and Hi-res (high resolution).

Each mode has its strengths and weaknesses that software designers consider when choosing which is best for their projects. For example, Text mode is faster, but Multicolor mode can show more colors in a given area.

GEOS uses Hi-res mode, which allows more highly-defined images to be displayed. In fact, GEOS uses Hi-res mode for both graphics and text. Most programs that handle text use preprogrammed Text mode characters, but GEOS uses hi-res characters made up of patterns of dots, called bitmaps. This means that GEOS characters can be any shape or size, and can be combined with graphics wherever and however the user wishes. The computer has to plot each dot that makes up a character when it displays

bitmapped text, so hi-res word processing is a little slow. It does, however, allow on-screen character formatting.

Many printers operate at the same resolution, measured in dots per inch (dpi), that GEOS displays on screen, so screen images translate faithfully to documents. Plus, most Commodore clip art is created in Hi-res mode (including Print Shop and Newsroom images), so they translate nicely into GEOS. In a way, Hi-res mode is something of a standard graphics format, so many images used by other computers, including the Macintosh, can also be converted to GEOS.

Windows and the Virtual Page

The first GEOS question I ever received from a reader was: "Why, when I print from geoWrite, does the printer always finish by advancing to the end of the page, even if a page full of text hasn't been typed?" The explanation points up another basic concept at work in GEOS: the virtual page. GEOS is always thinking of your document as an 8 1/2 x 11-inch page of data. When you work on that document, the screen display you see is only one section of the whole page. Whether or not you fill it up, the rest of the page is there as far as GEOS is concerned.

The partial view GEOS application provide for you to work in is called a window. You move that window around the document to work on it. In geoWrite 64, this means flipping from side to side across the page as you type along. In geoPaint it means using the scroll arrows to move across the image.

Only in geoPublish do you get the chance to work on a whole page at once, but even then a zoom window is available to let you see what you're doing in detail. In each of these cases, and throughout GEOS, everything you do happens on a "sheet of paper" in memory, a sheet that can be printed out dot-for-dot using just about any dot-matrix printer.

Next Up: GEOS 102

You're probably wondering how GEOS knows how to use "just about any dot-matrix printer," or how to get your copy of GEOS set up to understand your system, or how to avoid getting mangled by GEOS's formidable copy protection scheme. Now that we've looked at some of the concepts that govern GEOS, we can address the practical questions that will get you up and running. We'll set up GEOS step-by-step, from boot disks to printer drivers to work disks.

You may still have reservations about GEOS, but take heart; one or two more lessons, and you'll be zipping around the deskTop like a pro!



GEOS 102

by Steve Vander Ark

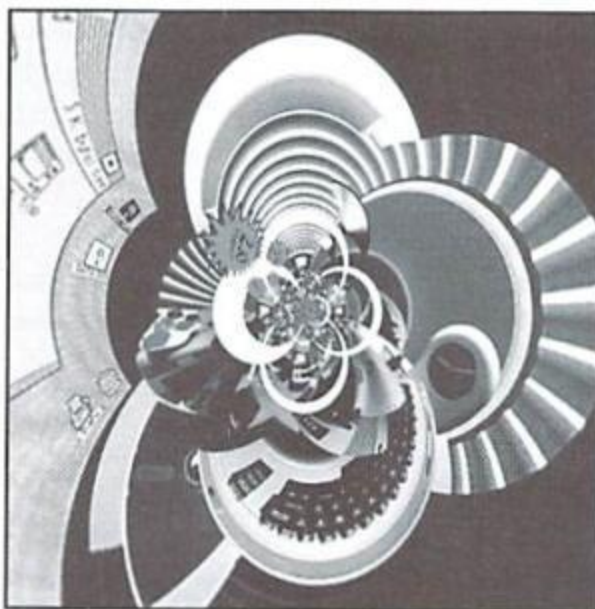
PART TWO OF AN INTRODUCTORY COURSE FOR THOSE WHO HAVE NEVER
HARNESSED THE POWER OF THE GRAPHICAL USER INTERFACE

In the previous segment of this series (GEOS 101) we discussed the basic concepts underlying the GEOS operating system. We looked at the way GEOS uses the disk drive, talked briefly about GEOS file structures, and discussed the pros and cons of high-resolution mode, the display mode used by GEOS. We mentioned the "virtual page" concept and talked about using a point and click interface.

That kind of background information is important for understanding what you see on your screen, but now it's time to leave theory behind and fire up GEOS. I'll talk about the infamous "installation" procedure and the GEOS copy protection scheme, then we'll take a look at the first thing you see, the screen most people think of as GEOS itself, the deskTop. So break out your boot disk, hit the switch on your power strip, and let's explore GEOS!

Lesson 1: Boot GEOS

Type `LOAD"GEOS",8,1` to start GEOS from drive 8; GEOS can be booted from either drive 8 or drive 9, so make sure you use the correct drive number in your boot command. If you're using the 128 version, just type `BOOT` or better yet let the disk autoboot as you power up. It takes a few moments for GEOS to insert itself into your computer's memory. During that time GEOS also sends some code to your drives, modifying their load and save functions, teaching them how to get along in the GEOS environment. The drives need that code to operate under GEOS, so if you



turn one of them off during a GEOS session and then turn it back on, it won't work and the system will crash.

Lesson 2: Copy Protection

If this is your first time booting GEOS, brace yourself. You're about to come face to face with the copy protection scheme which GEOS uses. You're going to have to go through the "installation" procedure in a moment or so, as soon as the boot process finishes, so while we have a little time, let me give you an idea of how the GEOS copy protection works. The installation will make much more sense to you if you have a clue as to what GEOS is doing. Each system disk has a serial number assigned to it, and each application which that system disk uses is automatically imprinted with that serial number.

You'll find that the first time you use geoWrite, for example, you'll need to go through an installation procedure for that application, and your copy of geoWrite is then coded to your boot disk.

The result of this procedure is that your particular system disk and your particular copies of geoWrite, geoPublish, or whatever will have the same serial number. Then every time you try to open one of the applications, your GEOS system checks the program code to see if it has the correct serial number. If so, the application opens and you're in business; if not, GEOS politely informs you that it cannot open that particular copy of the application. Your friends can't use a copy of your geoWrite, in other words, and you can't use a copy of their geoPublish.

This works just fine, as long as all your applications are tagged with the same serial number. Of course, it does mean that you can't really buy a used copy of a GEOS application because it won't work on your system. And if you get the installation procedure mixed up on an application somewhere along the line, you won't be able to use it.

Lesson 3: Installation

So, when the box shows up on the screen asking you if you want to key your disk to an application you've already been using, think before you click. You only get one shot at this. If you answer incorrectly, you could lose the use of your applications. (Remember, this only happens

when booting a GEOS **System** or **Backup System** disk for the *first* time.)

Here is what to do:

- Answer **YES** if you own other GEOS applications which you've been using with a different system disk.
- Answer **NO** if this is the first time you've operated using the GEOS programs.

If you answer YES, you'll be given a chance to insert an old application disk to let your new system disk copy and use your old serial number, thereby making it agree with your existing applications. A NO answer assigns a new serial number to your system disk, and all your applications will have to be made to agree with it. Follow the manual's instructions and all of the on-screen prompts very carefully.

Lesson 4: The deskTop

Once you get past the installation, you're in the wonderful world of GEOS. The screen you see when you first boot GEOS is called the deskTop, and its job is to help you handle all the programs and data files on your disks.

This is an important job, one that lies at the heart of everything you do with your computer. Files can be programs that you want to run, such as geoPublish or Graphics Grabber or Tetris. Files can also mean the data those programs generate such as text files from the word processor or lists of high scores for games. Some files are part of the operating system itself. Everything you do, whether you're using GEOS or not, involves files like these. By the way, don't ever move or erase files that you don't recognize, especially on the system disk, since they may be essential to GEOS right where they are.

The nice thing about a program like deskTop is that it makes handling all those files quick and painless. For one thing, they're easy to keep straight. If you're not sure what I mean, compare what you see when you use the deskTop with the standard directory you see if you type LOAD "\$", 8 and then LIST. Oh, sure, you see names either way, but in GEOS, using the deskTop, you see far more than that. Each file now appears not only as a simple set of letters but also as a little picture, one which gives you an immediate idea of what that file is. Take a look at the pictures (called "icons") that appear in two rows of four on a rectangular area in the left-middle of the deskTop screen when you first start GEOS. It isn't hard to tell which one represents a printer file; it's the one with the picture of the printer on it. The icon for

a document created with geoWrite looks like a stack of paper. The icon for a drawing you create with geoPaint looks like a frame surrounding some geometric shapes.

Lesson 6: The NotePad

Now, look at the area that the icons are in. That's the NotePad, and its job is to hold all the icons to represent all the files on your disk. Obviously, most disks have more than eight files on them. Your system disk, for example, has a LOT more. On the top edge of the NotePad you'll see a readout of how many there actually are, along with some notes on how much of the total disk space those files take up. You can see the icons for the rest of those files by *paging* through the NotePad. It's called paging because that's what it looks like when you do it, like you're paging through a series of sheets in a pad, each showing eight icons. You turn the page with the folded up corner in the lower left of the page.

That's an important idea there. It cuts to the heart of the way GEOS operates. When you work with the deskTop, and to some extent when you use any GEOS application, you work intuitively on the screen with the pointer. GEOS is designed to make sense the way our real world makes sense. It is logical, for instance, that if you want to throw something away you pick it up and toss it in the wastebasket. Same thing for GEOS; check out the lower right corner of the screen and you'll see the wastebasket. If you look a little further around the edges of screen, you'll see a printer icon and at least one disk-shaped icon. If you want to throw a file away, you'll drop it in the wastebasket icon. If you want it to print out on your printer, you drop it on the printer icon. If you want to copy it to another disk, you drop it on one of the disk icons. Simple as that.

Lesson 7: Menus & Dialog Boxes

If you'd rather, you can select those actions, as well as a lot more, from the drop-down menus at the top of the screen. A menu in the computer world, as you might know, is simply a list of choices on your screen from which you select using cursor keys or by pressing a letter or number. Drop-down menus are a special type of menu which do the same thing, but don't appear on your screen unless you want them to, if you want to make a selection. Then, when you call for them, they "drop down" (hence the name) into view, ready for you to select from them.

In order to do all this work on your files, to move around the deskTop, to pull menus down, and so on, you need to be able to extend your reach into that environment. The pointer on the

screen is your way of reaching out and interacting with the GEOS world, and your joystick or mouse is the way you move that pointer around to make your choices. Many of these choices require that you let the system know on which particular file you want the action performed. For example, it won't do to select *rename* from a menu if you don't specify which file on your disk you want to be renamed. And of course you can't drop something in the trash if you don't know how to pick it up in the first place!

The pointer can do more than just point. It can select files and even pick them up; you tell it to do so by clicking the button. One click *selects* whatever you're pointing at: if it's a file, the file will be shown in reverse to indicate that it's selected; if it's a menu, the menu will drop down; if it's a choice from a menu, the selected action will happen. A second click (preceded by a pause) on a file icon will attach that icon, and hence the file it represents, to the pointer to be moved. If you don't pause before the second click, GEOS may detect that you have "double-clicked" on the file icon, and will attempt to load the program or file it represents.

Once in a while the system will need to know some additional information from you, such as the new name you'd like to rename a file to. GEOS then opens a window on the screen called a "dialog box" which asks you for the information and gives you a place to type your response. Usually, dialog boxes also include at least one "button," small boxes which provide additional choices like CANCEL. You can select these buttons by clicking on them with the pointer.

Most GEOS applications use dialog boxes and drop-down menus. In fact, these intuitive ways of talking to your computer are a big part of what makes GEOS the immensely popular operating system that it is. They also make it easy to use various GEOS applications if you've mastered the basic functions like pointing and clicking on files and using pull-down menus.

Before you start using those applications, though, you need to do a little more work on the deskTop. If GEOS is going to work properly, it has to know how many disk drives you have and which type they are. It also has to know what kind of printer you're using, and how you want to use RAM expansion (if you have it). It's easy to fill GEOS in on these details, and you only have to do it once—that is, at least until you change your equipment around.

In our next segment, GEOS 103, we'll talk about configuring your system, and also take a look at the main applications you're likely to be using with GEOS.



GEOS 103

by Steve Vander Ark

PART THREE OF AN INTRODUCTORY COURSE FOR THOSE WHO HAVE NEVER
HARNESSED THE POWER OF THE GRAPHICAL USER INTERFACE

Over the last two installments of this article, we've examined some of the underlying concepts that make GEOS what it is. We looked at the way the system uses the disk drive, and worked through the copy protection scheme. We've talked about the way you work with files in GEOS, using the pointer to select, move, and open them.

Now it's time to get things all set up the way you will want them. After all, for GEOS to know how to copy a file to a disk drive when you drop a file icon onto a disk icon, the system has to know what kind of disk drive it is. The same goes for your printer; if GEOS doesn't know what kind of printer you have, there's no way it can know how to make your document print.

Fortunately, GEOS does a lot of this by itself. Not only that, but the system also remembers from one time to the next what equipment you're using. All you have to do is tell it once and from then on you're all set. Let's take disk drives, for example. GEOS knows about the standard types—the 1541, the 1571, and the 1581—so as it boots up it will spot any of those you happen to have hooked up and switched on. GEOS also recognizes the standard RAM expansion units. The trick really comes when you need to tell GEOS to look for an unusual type of drive, such as a RAMLink or an FD-series drive running with large partitions. In that case you'll need to follow the instructions that come with those devices to adjust your copy of GEOS. The file that takes care of all this configuring of drives is called, not



surprisingly, *Configure*. You'll see it on the first or second page of your desktop notepad (which as you recall is the name for that rectangular area with all the little file icons). If you want to adjust any of your settings, or maybe just see what GEOS knows, double-click on the *Configure* icon.

Disk drives are really pretty easy, since GEOS does most of the work for you. The same can't be said for printers. There are only a few types of disk drives, after all, but there are at least a hundred possible printers you could be using. GEOS doesn't keep the instructions for each of these printers in its own program code, since that would make the GEOS program way too big. Instead, the system gives you the chance to choose which printer you have from a list, after which the applicable set of instructions will be loaded into

your version of GEOS. Once you've set this, GEOS will remember which printer you are using until you tell it otherwise.

The little bit of program that tells GEOS which printer to use is called a printer driver. There are actually drivers for the disk drives too, but they load automatically, as I mentioned above. You can see all the different drivers for all the different printers if you page through your desktop notepad. Printer drivers have an icon that looks like a printer. As you page through, you might also see an icon that look like a mouse or a joystick. These are also drivers, but they tell GEOS how to use either a mouse or a joystick. They're called input drivers, since the mouse and the joystick are both input devices.

In order to choose the drivers that are right for your equipment setup you need to click once on the *geos* menu. When you do this, remember, you will activate a drop-down menu. From that menu, click on "select printer." (Notice that if you let the pointer wander off the menu, it disappears, so practice keeping it on track.) A dialog box will open, asking you to choose which printer you are using from the list. This list can't show all the printer drivers at once, so you'll have to click the little arrows at the bottom of the list to make it scroll up or down. If you don't see a driver for your particular printer, check the manual for suggestions. When you know which one you want, click on the name on the list and then click on the word OK. That's how you tell GEOS that you want to use the choice you've selected. (Most

dialog boxes work that way, with either an OK or a YES button and usually a CANCEL or NO button as well.) When you do this, the correct driver has been selected. When you get back to the main screen, the desktop, you'll see that a couple of things have changed: the name under the printer icon along the edge of the screen now says the name of your printer and there is a printer driver icon with that name on the first page of the Notepad.

Now you can do the same thing for your input driver, assuming it's different than the one you had chosen at first. Of course, this time you start by choosing "select input" from the *geos* menu.

Okay, let's roll. GEOS is running, you've installed your printer driver, you have a joystick (or better yet, a mouse) all ready to go. Now let's take a look at what makes GEOS so darned exciting. Let's get working.

Wait a sec... working? You bet. GEOS is, after all, a productivity package; and that means you'll use GEOS for writing, publishing, number crunching, and all those "work" activities that people get paid to do. But hey, GEOS has such a nifty set of programs to do all that work that you might even like it! I'll talk through the basic set of productivity tools, or *applications*, that come with GEOS.

You won't find these applications all on that same disk that you started out with, however. You'll have to close this disk, which you can do either by clicking on the close button (that square with a black square inside it) or by choosing "close" from the *disk* menu. Put another disk in your drive and then log it in either by clicking on the disk icon on the right side of the screen or by choosing "open," again from the *disk* menu. If you have more than one drive you'll see more than one disk icon, so make sure you're working with the right one. Some of these applications need to be "installed" before you can use them, which means you will be coding them to your own serial number.

Before you get to work with these applications and after you have them installed, it's best to copy them over to a blank, formatted disk. To copy a file, simply click on it once to select it, then click on it again to pick it up. Now drop (by clicking the button again) that file onto the disk icon for the drive which has the blank disk in it and GEOS will copy it over for you. The disk you just made is called a "work disk," and you'll want one for each application you use. Onto this disk you will copy all the files you need while working with that application, such as fonts (the various letter styles you might want to use) or graphics. Each work disk should probably include the desktop program as well, so copy that over. (If you have

more than one drive of the same type, you only need to have the desktop on the disk in one of them).

geoWrite

A word processor is probably the computer application people use most often. The word processor for GEOS is called geoWrite. Like all GEOS applications, geoWrite is "WYSIWYG," which stands for "What You See Is What You Get" and which means that what you see on the screen is what will come out of your printer. If you type in a larger typeface, you'll see it on the screen exactly the way it will look when it prints. As a result, when you look at the screen you are in effect looking at the top section of your page. The trouble is, if you use a 40-column monitor and the 64, you can't see the entire width; the view has to slide over to the right to track across to the other side. This takes some getting used to, believe me; I always set the margins so that I only work on a section of the page the width of the screen, then change them later when I'm ready to print out. Well, that's what I used to do before I started using GEOS 128 and an 80-column monitor regularly.

geoPaint

Graphics are a very important aspect of GEOS work. You can insert a graphic onto a page in geoWrite, you can include one on a geoFile database form, and so on. If you want to either create your own artwork or modify an existing piece of clip art, geoPaint is where you'll do it. Once again, you're working in a window looking at a small section of the final page, so you will have to figure out how to scroll that window around to see more of your work. If you're creating something to insert into another document, however, bear in mind that you can only create a *photo scrap* the size of the geoPaint window. In GEOS, a scrap is a snippet of information, either graphics or text, that is cut or copied from one place or document and kept invisibly in an internal storage area until pasted into another place or document. "Cut," "copy," and "paste" are commands found on the *edit* menu; you generally have to have some section of text or graphics "selected" before you cut or copy.

Let's say you wanted to create a letterhead with a graphic in it. Eventually, you'll want this to appear at the top of your letter to your sister. So you load up geoPaint and create the image you want using the various drawing tools to draw an image and the text tool to insert your name, address, and so on. Once it looks the way you want, you can use the "select" tool, the one that looks like a small square drawn with a dotted line,

to surround your image. This selects it. Now from the *edit* drop-down menu choose "cut." The image disappears; it has been copied to a temporary memory location. If you wanted to copy it off but leave a copy on your geoPaint page as well, you'd choose "copy" instead of "cut." Now you open your geoWrite document, place the cursor at the top of the page, and choose "paste." Your letterhead image appears centered at the top of the page. Note that it always appears centered, but you can adjust the margins in for that image so it moves left or right.

You can also store scraps—photo scraps of graphics or text scraps of text—in *albums*. There are small programs to handle each kind, the "photo manager" and the "text manager," which appear in your *geos* menu. The album that holds the graphics or text snippets you will want in your documents should be stored on the work disk for that application, since the manager programs don't access other drives.

These are the two main applications that come with your GEOS package. Other applications are available: geoCalc, a spreadsheet; geoFile, a database program; and geoPublish, easily the finest desktop publishing software there is for the Commodore computer.

A lot of other programs are available for GEOS as well, as you can tell by reading my GEOS column in this and other magazines. You can also find fonts (type faces), clip art, and utility programs, both from commercial sources such as CMD and from telecommunications services like GENie or CompuServe or even some local bulletin boards.

And there is so much more for you to learn about GEOS! I haven't even begun to explain about things like desk accessories, autoexec files, RAM devices, fancy printer drivers, and so on and so on... But let me tell you this: if you find GEOS as exciting to use as I and so many other Commodore aficionados do, you will want to learn ways to use those power tools in your own work. In fact, most of the cautions I mentioned in this article—the small size of photo scraps, for example—have been corrected with various add-on programs you can get for very little money.

How can you find out what you need to know? Read the GEOS column in this and in other magazines! If you have questions, get yourself a GENie account so you can ask the experts on-line, or write to this magazine. The editor is a GEOS expert, too, and what he doesn't know he knows how to find out. And of course, read the manual. I know that software manuals aren't always the easiest things to read, but you can really add to your enjoyment of GEOS by spending a little time learning the ropes. ☺

commodore

LIQUIDATION UPDATE

by Tim Walsh

Not a day goes by that at least a half-dozen or more folks call, write, or fax questions to me to find out the latest scoop on the Commodore liquidation situation. Surprisingly, a fair number of these callers and writers are companies, not end users or consumers. As of this writing (late November) nobody really knows precisely what will happen, or exactly when.

However, thanks to my conversations with one of the top bidders for the corpse of Commodore, I can give interested readers a rough idea of the course of events. Ultimately, the fate of Commodore and its technology rests in the hands of the Bahamian Supreme Court, based in the beautiful island of Nassau, in the Bahamas.

Liquidation Travels

The current state of affairs reads as follows: The major bidder for Commodore at this time appears to be Miami-based Creative Equipment International (CEI), the world's largest distributor of Commodore products. During the second week of November, the trustee (the court-appointed lawyer overseeing the liquidation) accompanied CEI executives on a week-long foray to the Philippines. The purpose of their trip was to review the former Commodore production plant.

Formerly managed by one of the Commodore subsidiaries and now in possession of the trustee, this plant produced most of the C-64s, C-128s, and certain Amiga models during the 80's. Already suffering the effects of monumental CBM losses in late '92 and '93, and continually plagued by a lack of cash to acquire new parts and machinery, the shop was all but completely out of business by the time the liquidation occurred last April.

When the trustee and CEI attempted to conduct their inventory of what remained at the Philippine plant, numerous problems immediately arose. Namely, the building was abandoned and over 2000 disarrayed pallets of computers, peripherals, and miscellaneous parts had been hastily moved

to a warehouse across the street. Complicating matters, the computers and parts were not organized, but rather tossed into boxes with incorrect labels, or, in some cases, no labels, resulting in massive piles of clutter.

Consequently, in the five days they were on location, CEI could not verify the inventory manifest of parts and computers that the trustee presented. The trip, however, could not be considered a waste of time, at least from CEI's vantage point. The mis-labeled and disorganized inventory could be used in CEI's favor. With no way to verify the inventory, CEI enjoys bargaining from a position of power in any negotiations.

I'll Take Computers for \$500, Alex

During the month of October, CEI conducted live public forums on three of the top on-line networks (BIX, Delphi and Portal). Transcripts of each conference were published in weekly editions of Jason Compton's Amiga Report—an AmigaGuide-based online magazine. Candid and forthcoming during these conferences, Amor shared a wealth of insight on CEI's business plans and general disposition of the market.

Amor publicly stated on several occasions during these discussions that future computer production would occur in the Philadelphia area and other East Coast locations. Those who follow the Commodore liquidation events closely may wonder why CEI is interested in the Philippines plant. It's important to note that no change has occurred in CEI's business plan and all their previous statements of keeping computer production in the U.S. still hold true.

CEI has no plans to renew production in the Philippines; rather, their newfound interest in the Philippine operations is simply because the majority of hardware assets including machinery, spare parts, and assorted inventory remains in the Philippines. For production to resume on a timely basis, CEI will need as many of those parts as possible.

Upon their return to the US, CEI was prepared to sign with the trustee within one week's time, but needed to investigate a number of items before doing so. For starters, they hope to reach an agreement with the trustee concerning the value of the inventory in the Philippines. Further verification of the inventory may be necessary, but given the prohibitive cost and the amount of time required to do so, more delays may arise.

Should they arrive at an initial agreement concerning the inventory, they need to determine how quickly the parts and existing inventory can be moved to the U.S. and how soon production might resume. It'll be no small chore to accurately determine if that inventory can be converted into product, since it's unclear how many of those parts and computers can be salvaged. Another point that needs further attention is general number crunching on CEI's part. As with a large-scale acquisition, it's crucial that a return on investment is realized in the shortest possible timeframe.

Details, Details

Finally, CEI stated they continue to work on the language of the bid. With its myriad of business units and intellectual properties, acquiring Commodore is not a clear-cut process, but rather a cloudy, murky transfer of various (and in some cases, questionable) assets.

I've been told by Amor that once all these hurdles are cleared, expect a two-to-three week process where the liquidator presents the bid to the Bahamian Supreme Court. The court, in turn, makes the bid public to other interested parties through a public auction. If no one bids higher, CEI gets it.

On a final note, Amor stressed that they're cautiously optimistic. If CEI wins the bid, there's no time for a celebration party, but expect some exciting new product announcements. I don't know about you, but I can't wait!

It's back. And it's cooler, faster and more affordable than ever...

You've waited a long time for this. The opportunity to own the finest peripheral equipment ever made for your system. You've listened while others talked of the speed, the convenience, the compatibility, and the power. And you've stood by as the prices have gradually dropped, year after year. But they never dropped quite low enough—until NOW! Because now, CMD has a limited number of brand new HD-20 hard drives available at a super low price. Not only that, but these drives employ a 2.5" SCSI mechanism that runs faster and cooler than ever before. If you've been waiting for an affordable HD, then don't miss



The Return of the CMD HD-20.

\$299

To Order Yours, Call 1-800-638-3263.

See full CMD advertisement elsewhere in this issue for shipping prices.

Creative Micro Designs, Inc.

FOR THE BEST SELECTION OF NEW AND REFURBISHED COMMODORE EQUIPMENT CALL 1-800-638-3263



JiffyDOS
pre-installed on
every computer &
disk drive!

**90 DAY
WARRANTY**
on new items, 30
days on used.



COMPUTERS

C64 or C64c (NEW!)	\$139.00
C64 or C64c (refurbished)	\$89.00
C128 (refurbished)	\$129.00
C128-D (refurbished)	\$239.00

MONITORS

1802 (NEW!)	\$189.00
1802 (refurbished)	\$129.00

DISK DRIVES

1541 (NEW!)	\$119.00
1541 (refurbished)	\$75.00
1541-II (refurbished)	\$109.00
1571 (refurbished)	\$125.00

COMPLETE SYSTEMS

C64/1541 (NEW!)	\$239.00
C64/1541 (refurbished)	\$149.00
C64/1541/1802 (NEW!)	\$419.00
C64/1541/1802 (refurbished)	\$269.00

All items subject to availability, call before ordering. Prices subject to change without notice.



Creative Micro Designs, Inc.



COMMODORE TRIVIA

by Jim Brain

These trivia questions are my gift to the Commodore Community at large; while other parts of this magazine may not be reproduced without the consent of Creative Micro Designs, Inc., these questions are public domain. I ask only that the article remains intact and unchanged, and that my information appears somewhere so users

can contact me. These questions form a contest that I run on the Internet, so you may feel free to contact me for all the relevant information. If you do use them, I always welcome a postcard detailing where they were used. If you have a question, please send it (with answer) as well. Enjoy!

Jim Brain (Internet: brain@mail.msen.com)
Brain Innovations, Inc.
2306B Hartland Road
Hartland, MI 48353

COMMODORE TRIVIA #4 QUESTIONS

- \$030 On a Commodore 64, what is the amount of RAM available for BASIC programs to reside in?
- \$031 Name one Commodore computer (pre-Amiga) that used two general purpose microprocessors?
- \$032 What are they?
- \$033 Who was the Chief Executive Officer of CBM when the Commodore VIC-20 (VC-20) was introduced?
- \$034 The Commodore 64 and 128 (among others) have a TOD feature. What does TOD stand for?
- \$035 What location in the Commodore 64 Kernal holds the version number?
- \$036 The first computer Commodore sold was the KIM-1. How much RAM was available on the KIM-1?
- \$037 Who designed the architecture for the 6502 integrated circuit?
- \$038 What was the original name of the company that produced the 6502?
- \$039 What did the name stand for?
- \$03A Commodore acquired the company and renamed it to...?
- \$03B The Commodore VIC-20 graphics were powered by the VIC-I (6560) integrated circuit. Was the chip designed for the computer, or was the computer designed for the chip?
- \$03C The VIC-20 had a Video Interface Chip (VIC) inside it, yet that was not what the 'VIC' in the model name expanded to. What did it expand to?
- \$03D The most widely known disk drive for Commodore computers is the 1541. How much RAM does the 1541 have?
- \$03E On every Commodore disk, the drive stores a copy of the BAM. What does BAM stand for?
- \$03F Now, for those into 6502 machine language. What instruction was not available on the first 6502 chips?

COMMODORE TRIVIA #3 ANSWERS

- \$020 Institute of Electrical and Electronics Engineers.
- \$021 It was a the face and hands of a man with glasses inside a circle. Early renditions of him were in black and white, while later ones had him with blond hair and a red shirt. Some views had him actually typing on the 64/VIC with one finger, but most just showed him, not the keyboard.
- \$022 The 6551 UART IC. It is used for RS-232 communications.
- \$023 Fleur-de-lis. The "Godfather" theme.
- \$024 Twice, second copy is placed right after the first. That means, even if you get a load error on load, you might be able to just run the program anyway, as a load puts the first copy in memory, and verifies it against the second copy.
- \$025 A jiffy is 1/60th of a second. It is the same on PAL and NTSC Commodore computers.
- \$026 On the VIC-I IC, the text and graphics screens are definable within limits. Therefore, there are a number of answers that are correct: The default screen has (and the answers I was looking for):

Text: 22H x 23V = 506 characters
Graphics: 176H x 184V = 32384 pixels

However, on experimentation with a NTSC VIC-I (6560), I found that it could support a resolution of:

Text: 24H x 29V = 696 characters
Graphics: 192H x 232V = 44544 pixels

Your mileage may vary, but these numbers remove all border area. (I am not sure if you can use all the pixels, since the VIC-I only allows 32768 to be used. You might be able to flip the graphics page in the middle of the screen, but I leave that as an exercise.)

The VIC-I also supports a virtual screen, which can be "panned" so that the physical screen becomes a "window" into the virtual screen. The maximum "scrollable" virtual screen on NTSC is:

Text: 28H x 32V? = 896 characters
Graphics: 224H x 256V? = 57344 pixels

The VIC supports more resolution than 32V, but you can never see it since you can't scroll it into view, so the point is moot.

So, if I didn't thoroughly confuse you, email me and I will make sure I do!

\$027 Because 'V' is pronounced 'F' in Germany, and the resulting pronunciation was a naughty word.

Commodore put one over on many people. The VIC-20 was designed in the states and given that name due to the IC that did the graphics. When the marketing started, CBM found out the name was no good in Germany, so they quickly renamed it VC-20. The after-the-fact Volks-Computer conjured up images of the Volkswagon car (VW), which was popular at the time for its dependability and price. The rest is history...

\$028 Simple. Commodore made office furniture, which includes desks and filing cabinets. They simply used the facilities and parts on hand. The fact that, at the time the PET came out, people equated physical stability of a machine as an indication of its worth, served only to reinforce the decision. Also, the system had to hold up the built-in monitor.

Most people think it is due to FCC regulations. FCC regulations had not been determined at the time the PET came out, although the engineers did know that the CRT produced many electrical hazards which could be alleviated with a shielded metal case. Commodore has always been a "cheap" company, so the fact that they could get good shielding in-house at almost no cost proved to be the overriding factor. It might interest some to note that, even with the metal case, early PETs had foil inside as a secondary shield. The reason has to do with the keyboard being mostly plastic, as the shield fit directly underneath, but the reason for it remains a mystery to me.

\$029 The answers I was looking for are END and STOP, although someone correctly pointed out that GO TO can be construed as a misspelling. Also, PRINT#, GET#, and INPUT# might work if the '#' was omitted and the program was getting data to screen or keyboard. Although the following aren't really the result of misspelled commands, I put them in, since you could stretch the definition of misspelled to include them.

LET would work if it was left out, since LET was an optional keyword. Commands of the form <keyword> <number or variable> would work if letters were tacked onto the end. (Example: RUNDY., prg has a valid line 0, and DY=0). Finally, LOAD "JIM", 8, 1 garbage would work due to the way LOAD absolute worked, but that is a stretch!

\$02A CIA=Complex Interface Adapter. The German Magazine 64'er calls it a Control Interface Adapter, but that is not its official name.

\$02B A lot of people answered redefinable characters, but that alone does not provide FULL-SCREEN graphics. 256 8*8 cells gives you a little over

1/2 of the screen in graphics, but the VIC has the ability to make each character cell be 8*16, which gives enough pixels to map the entire default screen.

\$02C Two. One on back, one on side near the back.

\$02D CBM80 at \$8004. The letters must have bit 7 set. So, the actual PETSCII codes are 195, 194, 205, 056, 048. (\$c3, \$c2, \$cd, \$30, \$30 in HEX)

\$02E MOBs, or Movable Object Blocks.

\$02F Wow, I got so many responses to this! This question actually dealt with a typical user, but people sent in descriptions of what the code does and how to patch it. So, there are two sets of answers to this:

User Answer:

1) If you put the cursor at the bottom of the screen and type 82 characters (not 81) and then try to delete back to the 78th one.

2) Any of the following will work:

a. Do not use the following colors for the cursor: red, blue, yellow, light red, dark grey, light blue, light gray.

b. Some people devised an IRQ wedge that will recover from the lockup.

c. Have the following lines as the first lines of a program:

10 OPEN 15,8,15

20 INPUT#15,A\$

3) There are actually two ways to recover. They are:

a. If you have a reset button installed on the 64, reset the machine, then load and run an unnew program. (I accepted this, but I figured most people would assume this much)

b. If you have a tape drive installed, press either Shift-3 or move a joystick installed in Port 1 in the UP direction. Then, respond to the directions on the screen "PRESS PLAY ON TAPE". Next, press RUN-STOP to stop the tape load.

What really happens: (I can't prove this)

1) The user types the line of text and the scroll code is invoked. The first two lines become linked as one logical line, and the third line is treated as a new line.

The user deletes the 82nd and the 81st character and then hits delete while in the first column of the third line. Since the delete will put the cursor back up into the second line, which is linked with the first, the KERNAL gets confused and thinks the second line is at the bottom of the screen. Remember, the "cursor" is actually constructed by a combination of using reverse characters and changing the color RAM nybble for that screen location. Thus, when the cursor gets "erased" from the first

column of the last line, the KERNAL thinks the color nybble for it is at \$DC00, which is 40 bytes off from the actual position. \$DC00 is actually Port A for CIA #1, which is where the kernel writes the column of the keyboard it wishes to scan. Because the Kernal is messed up, it puts the color nybble for where it thinks the cursor was into this location. (That is why there is a connection between cursor color and this bug.

Now, the system integrity has been compromised, but it does not show yet. The user proceeds to delete the 80th character. As the user deletes the 79th character, the bad value in \$DC00 goes to work and fools the Kernal into thinking SHIFT/RUN-STOP has been pressed. It also pretty much disables the keyboard.

2) Since the Color RAM is what the Kernal gets confused about, the solution was to not use certain bit patterns of colors:

RED	0010
CYAN	0011
BLUE	0110
YELLOW	0111
LIGHT RED	1010
DARK GRAY	1011
LIGHT BLUE	1110
LIGHT GRAY	1111

OK Colors:

BLACK	0000
WHITE	0001
PURPLE	0100
GREEN	0101
ORANGE	1000
BROWN	1001
MEDIUM GRAY	1100
LIGHT GREEN	1101

All of the BAD colors have bit 1 set. I have no idea what the significance of that is.

3) You needed to get out of the tape load code, but you only had so many keys that were still active. So, if you followed the directions on the screen, you could break out. Since the tape load code uses CIA #1 for its operations, it would take over the IC and then restore it to a correct state when either the load was stopped or the load completed. Now, that is amazing!

(Someone is free to check up on me concerning this, since I do not have a Rev 1 ROM to try out. If someone has one, I would like to have a copy of it on disk or in email. And if someone has the information on this bug from either the May 1984 Gazette p108, or from the COMPUTE! Toolkit Kernal VIC20/64, I would like a copy.)



CMD • HARDWARE • ORDERS: 1-800-638-3263 • SOFTWARE • CMD

HD Series SCSI Hard Disk Drives

HD-20, 20 MB (Limited Supply)	\$299.00
HD-40, 42 MB (Limited Supply)	\$375.00
HD-40, 85 MB (Limited Supply)	\$425.00
HD-100, 170 MB (Special Edition)	\$475.00
HD-200, 270 MB (Special Edition)	\$520.00
HD-500 / 1000	\$595.00 / \$995.00

FD Series 3.5" Floppy Disk Drives

FD-2000 (800K and 1.6 MB)	\$179.95
FD-4000 (800K, 1.6 MB and 3.2 MB)	\$249.95
FD Real-Time-Clock Option	\$20.00
Box of 10, High Density Disks (1.6 MB)	\$14.95
Box of 10, Enhanced Density Disks (3.2 MB)	\$29.00

JiffyDOS

(Specify computer and drive serial number)

JiffyDOS C64/SX-64 System	\$49.95
JiffyDOS C-128/128-D System	\$59.95
Additional Drive ROM's	\$24.95

Miscellaneous Hardware

CMD EX3 3-Port Cartridge Port Expander	\$29.95
GeoCable II Print Cable 6ft/15ft.	\$29.00 / \$34.00
MW-350 Printer Interface (OK/8K Buffer)	\$49.00/\$60.00
Aprotek 3-Way User Port Expander	\$30.00
Aprotek User Port Extension Cable	\$19.00
CMD Gamepad/Joystick Controller	\$24.95
CMD's 1351 Compatible Trackball	\$69.95
CMD's 1351 Compatible SmartMouse	\$49.95
Mouse Pad	\$2.95
Samsung SP-2412 24-pin Epson-comp. Printer	\$199.00
Samsung SP-0912 9-pin Epson-comp. Printer	\$149.00
C-128D Computer (C=Refurb, w/JDOS)	\$199.00
C-64/64-C Computers (NEW, w/JDOS)	\$139.00
C-64/64-C Computers (CMD Refurb, w/JDOS)	\$89.00
1802 40-column Monitor (NEW)	\$189.00
1802 40-column Monitor (CMD Refurb)	\$139.00
1541 Disk Drives (NEW, w/JDOS)	\$119.00
1541 Disk Drives (CMD Refurb, w/JDOS)	\$75.00
1541-II Disk Drive (refurb, w/Power Supply)	\$109.00
C-64, C-64C Power Supply (Repairable)	\$39.00
C-128 Power Supply (Repairable)	\$49.00

Utilities

CMD Utilities	\$24.95
JiffyMON-64 (ML Monitor)	\$19.95
Big Blue Reader V4.10 (SOGWAP)	\$39.00
Buddy 64/128 Assembler	\$39.00
The Compression Kit '94 (Mad Man)	\$39.00

GEOS

GEOS 64 v2.0	\$44.00
GEOS 128 v2.0	\$49.00
geoCalc 64 or geoFile 64	\$40.00
geoCalc 128 or geoFile 128	\$45.00
geoProgrammer	\$45.00
geoPublish	\$40.00
geoChart	\$29.00
Desk Pack Plus	\$29.00
FONTPACK	\$25.00
International FONTPACK	\$25.00
geoBASIC	\$20.00
RUN GEOS Companion	\$20.00
RUN GEOS Power Pak I or II (Specify)	\$20.00
gateWay/64 or 128 (Specify Version)	\$29.95
Collette Utilities (Handy Geos Utilities)	\$19.95
Perfect Print LQ for GEOS (Laser-like output)	\$49.95
geoMakeBoot (Makes Bootable copies)	\$12.95
geoShell V2.2 (CLI for GEOS)	\$24.95
Dweezils Greatest Hits (NewTools2, Stamp, Label128)	\$30.00

Books

Anatomy of the 1541	\$12.00
Basic Compiler Design for the C-64	\$12.00
C-64 Science & Engineering	\$12.00
C128 Computer Aided Design	\$12.00
C128 BASIC Training Guide	\$12.00
Cassette Book for C-64 and Vic 20	\$12.00
Commodore 64 Tricks and Tips	\$12.00
GEOS Programmers Reference Guide	CALL
Graphics Book for the C-64	\$12.00
Hitchhikers Guide to GEOS	\$35.00
Ideas for Use on Your C-64	\$12.00
Printer Book for the C64	\$12.00
Simple Internet	\$16.95
Superbase - The Book	\$15.00

Midi & Sound Hardware/Software

Sonus 64 Sequencer, MIDI Interface, Cables	\$99.00
Sonus 128 Sequencer, MIDI Interface, Cables	\$99.00
Digimaster	\$34.95

RAMLink Power-Backed RAM Disk

RAMLink Base Model (OK, No RAMCard)	\$149.95
RAMLink with 1 MB RAMCard	\$229.95
RAMLink with 4 MB RAMCard	\$349.95
Real-Time-Clock for RAMCard (Optional)	\$20.00
RAMLink Battery Back-up (Optional)	\$24.95
Parallel Cable (RAMLink to HD)	\$14.95

Languages/Compilers

BASIC 64 Compiler (Abacus)	\$17.00
BASIC 128 Compiler (Abacus)	\$25.00
Blitz! 64 Compiler (Skyles)	\$30.00
Blitz! 128 Compiler (Skyles)	\$30.00
Cobol 64 (Abacus)	\$17.00
Fortran 64 (Abacus)	\$17.00
Pascal 64 (Abacus)	\$17.00

Productivity

Tax Perfect 64 (Free '94 Upgrade)	\$69.00
Tax Perfect 128 (Free '94 Upgrade)	\$79.00
Outrageous Pages (Batteries Included)	\$19.00
PaperClip 3	\$35.00
Pocket Writer 2 (64) (Digital Sol.)	\$65.00
Pocket Writer 3 (64 or 128) (Digital Sol.)	\$70.00
Pocket Planner 2 or Pocket Filer 2 (Digital Sol.)	\$35.00
SuperScript 64 (Precision)	\$15.00
SuperScript 128 (Precision)	\$20.00
Data Manager 2 (Timeworks)	\$16.00
Suberbase 64 Version 3.01 (Precision)	\$35.00
Superbase 128 Version 3.01 (Precision)	\$35.00
PowerPlan 64 (Abacus)	\$16.00
SwiftCalc 64 (Timeworks)	\$16.00
Personal Portfolio Manager (Abacus)	\$16.00
SEC Check Register 128	\$29.00
Cadpak 64 (Abacus)	\$22.00
Cadpak 128 (Abacus)	\$25.00
Chartpak 64 (Abacus)	\$17.00
Chartpak 128 (Abacus)	\$25.00
I Paint v1.5 (128, 80-col., 64K VDC) (Living Proof)	\$39.00
I Port v1.54 (128, 80-col., 64K VDC) (Living Proof)	\$29.00
RUN Productivity Pak I, II, or III (Specify)	\$15.00
RUN Super Starter Pak 1541 or 1581	\$20.00
RUN Works	\$20.00

Telecommunications

Dialogue 128	\$29.00
SpeedTerm (Abacus)	\$25.00
SwiftLink RS-232 Cartridge (Up to 38.4K baud)	\$39.95
SwiftLink Modem Cable (DB9-DB25)	\$9.95
BOCA 2400 Baud Modem	\$69.00
BOCA 2400 w/SwiftLink and Cable	\$99.00
BOCA 14.4K Baud Modem	\$159.00
BOCA 14.4K w/SwiftLink & Cable	\$189.00
Aprotek MiniModem C-24 (C= ready, 2400 baud)	\$69.00
Aprotek MiniModem C (C= ready, 1200 baud)	\$50.00
Aprotek Modem adapter (C= to Ext. PC Modem)	\$20.00
Aprotek Convert-a-Com (C= Modem-PC adapter)	\$29.00

Games

AcroJet	\$12.00
Atomino	\$17.00
Ballistix	\$13.00
Blood Money	\$15.00
Chomp!	\$10.00
Conflict in Vietnam	\$16.00
F-15 Strike Eagle	\$16.00
Project Stealth Fighter	\$20.00
Laser Squad	\$13.00
Last Ninja II	\$15.00
Mainframe	\$13.00
Marble Madness	\$13.00
Menace	\$15.00
Navy Seal	\$10.00
Red Storm Rising	\$16.00
Rings of Medusa	\$16.00
RUN C128 Funpak	\$15.00
RUN C64 Gamepak	\$15.00
Skate or Die	\$13.00
The Amazing Spider-Man	\$15.00
The President Is Missing!	\$10.00
The Three Stooges	\$10.00
Tie Break Tennis	\$16.00
Total Eclipse	\$10.00
Ultima V	\$17.00



JiffyDOS

Increase Speed Up to 1500% while retaining 100% compatibility

- Speeds up Loading, Saving, Verifying, Formatting and Reading/ Writing of Program, Sequential, User and Relative files unlike cartridges which only speed up Loading and Saving of PRG files
- Built-in DOS Wedge plus 17 additional features including file copier, text dump, printer toggle, and redefinable function keys make using your computer easier and more convenient
- ROM upgrade installs easily into most computers and disk drives. Supports C-64, 64C, SX-64, C-128, 128-D, 1541, 1541C, 1541-II, 1571, 1581 and more.

FD Series

3.2 and 1.6 MB 3.5" Floppy Drives

The FD-2000 and FD-4000 disk drives utilize today's latest 3.5 inch disk drive technology. FD-2000's support 800K (1581 style) and 1.6 MB (High Density) formats, while the FD-4000 also offers support for the 3.2 MB (Enhanced Density) disk format. Fast and reliable, they support 1541, 1571 and 1581 style partitions, Native Mode partitioning and can actually read and write 1581 disks. FD's feature built-in JiffyDOS, SWAP button and optional Real Time Clock. High capacity, speed and compatibility make the FD right for every application, including GEOS.



RAMLink

Power-Backed Expandable REU

The fastest possible form of storage, RAMLink provides instant access to files and retains data while your computer is turned off. Easy to use and expandable up to 16 MB, RAMLink utilizes the same powerful operating system found in CMD Hard Drives. Unlike Commodore REU's which are compatible with less than 1% of commercial software, RAMLink supports more than 80% of the commercial titles. RAMLink also offers built-in JiffyDOS Kernel, SWAP feature, reset button, enable/disable switch, pass-thru port and RAM port for REU/GEORAM use. RAMLink offers maximum speed, expandability and compatibility with all types of software and hardware including GEOS.



HD Series

SCSI Hard Drive for the C-64/128

HD Series Hard Drives are available in capacities up to 1 GB, are fully partitionable, and can emulate 1541, 1571, & 1581 disks while Native partitions utilize MSDOS-style subdirectories. HD's connect easily to the serial bus or parallel via RAMLink. Includes built-in JiffyDOS, SWAP feature and RTC. HD's offer superior compatibility with most commercial software including BBS, Productivity and GEOS. And with new pricing, HD Series drives offer the lowest cost per megabyte of any C64/128 storage device.



Shipping and Handling Charges

Use the chart below to match your order subtotal with your shipping zone and method.

Order Subtotal	Continental United States					
	UPS Ground	2nd Day	Next Day	AK HI, PR	Canada	Foreign
\$0.01 - \$19.99	\$3.00	\$8.00	\$17.00	\$12.00	\$5.00	\$15.00
\$20.00-\$29.99	\$5.00	\$9.00	\$18.00	\$14.00	\$7.00	\$20.00
\$30.00-\$59.99	\$6.00	\$10.00	\$20.00	\$15.00	\$9.00	\$25.00
\$60.00-\$149.99	\$8.00	\$12.00	\$23.00	\$19.00	\$12.00	\$35.00
\$150.00-\$299.99	\$10.00	\$14.00	\$27.00	\$21.00	\$20.00	\$50.00
\$300.00-\$799.99	\$15.00	\$20.00	\$34.00	\$27.00	\$25.00	\$55.00
\$800.00 +	\$20.00	\$25.00	\$40.00	\$32.00	\$35.00	\$60.00

UPS C.O.D. add \$5.00 (U.S. PR only)

Payment and Delivery: CMD accepts MC, Visa, Money Orders, COD and Personal Checks. Personal Checks are held for up to 3 weeks. Most items are stock, contact CMD for current delivery schedules. Returns for merchandise credit only within 30 days with prior authorizations. All prices and specifications are subject to change without notice.



Creative Micro Designs, Inc.

P.O. Box 646
East Longmeadow, MA 01028

Info: (413) 525-0023
Fax: (413) 525-0147

Need Input? It Doesn't Get Any Better Than This...



\$69.⁹⁵

**Smart
TRACK**

For years, Commodore set the standard with the 1351 Mouse. Sure, it was vastly superior to using the old digital input devices like the 1350 mouse, joysticks or imitation trackballs. But everything can be improved. Guaranteed 100% 1351-compatible, SmartMouse and SmartTrack do everything the C-1351 does and more! These highly intelligent, three-button input devices include a built-in battery-backed Real-Time Clock, along with double-click and Turbo features for GEOS. Plus, they come with a complete set of utilities for using the clock in GEOS and BASIC applications. Modern ergonomic designs make these devices smooth operators that are a pleasure to use. So, if you're tired of the slow, erratic movement of your current input device, make the intelligent choice and pick up a SmartMouse or SmartTrack today!



\$49.⁹⁵

**Smart
MOUSE**

SmartMouse and SmartTrack... the Best C-64/128 Input Devices Ever!

- Three buttons means convenience! If you're a GEOS user, the left button is configured as single click, the right as a handy double click and the center button is the TURBO button. When depressed, it doubles the speed at which the pointer moves across the screen. Additionally, programmers can assign their own functions to all three of the buttons.
- Unlike other third party mice or trackballs, the CMD SmartMouse and SmartTrack trackball use the same custom gate array chip as the Commodore C-1351 mouse. This guarantees 100% compatibility.
- Switches easily into joystick emulation mode on power-up by holding down the right button.
- SmartMouse/SmartTrack utilize the same advanced technology used in today's powerful 486 and Pentium PC's, providing you with unparalleled accuracy and smoothness.
- Built-in battery-backed Real-Time Clock automatically sets the GEOS clock, displays time and can be used in your own programs.
- Includes utilities disk and detailed manual explaining the utilities and programming information.
- Attention Lefties! SmartMouse can be altered for left handed use.
- Don't be fooled by the old style digital "trackballs". These only perform as well as a joystick. SmartTrack uses analog inputs for greater accuracy.

LOADED WITH SPECIAL FEATURES

- **Freeze Feature**
Lets you save most programs to disk without copy protection
- **Centronics Interface**
Use a fast GEOCABLE to print with most software
- **Built-in Copier**
Make fast disk and file copies
- **Sprite Editor**
Create and edit sprites
- **ML Monitor**
Examine all memory including stack, I/O, & registers
- **Blow-up**
Make any portion of a picture up to the full size of the screen
- **Message Maker**
Turn any captured screen or graphic into a scrolling message with music

PLUS...

- **Infinite Lives Generator**
 - **Screen Editor**
 - **Printer Dump**
 - **Slide Show Maker**
- ... AND MORE!**

**Tired of Fighting with Copy Protection?
Having Trouble Booting Software from a CMD Device?
Need a Back-up of Your Hard-to-Find Software?
Then It's Time To Take ACTION!**

THE ULTIMATE CARTRIDGE COMES OF AGE!

THE MOST POWERFUL,
FRIENDLY AND FEATURE
PACKED UTILITY
CARTRIDGE EVER
CONCEIVED!

DATEL
Electronics



Due to changes in British Copyright Law, Action Replay Cartridges Shipped To The U.S. Are Version 5.2

**Only
\$59.⁹⁵**

**ACTION
REPLAY
MK VI**

FOR THE C64 OR C128 IN 64 MODE

SOFTWARE

IN REVIEW

```

Financial Cookbook
Saving on Your Savings
finds the effect of withdrawing
constant buying power monthly

Initial savings balance 500.00
Monthly withdrawal 100.00
Interest rate earned 3.25
Compounding periods 12
Marginal tax rate 12

Money will last 4 years and 8 months

Total withdrawn ..... 400.00
Interest earned ..... 6.25
Interest paid ..... 6.25

-----WITHDRAWALS-----
YR MONTHLY ANNUAL TAX PD BALANCE
1 100.00 1200.00 12.00 108.75 391.25
2 100.00 1200.00 12.00 108.75 282.50
3 100.00 1200.00 12.00 108.75 173.75
4 100.00 1200.00 12.00 108.75 65.00

COMPUTE, F12, PRINT, F10, QUIT, F9, CANCEL, F8
Arrows select command, RETURN does it

```

Financial Cookbook

by Stan Trost; Originally distributed by Electronic Arts; Currently available from SSI.

You may be thinking: "A Financial Cookbook? From Electronic Arts? Hmmm... I thought they specialized in entertainment software?" Well, in 1984 Electronic Arts added Stan Trost's Financial Cookbook to their menu of software confections.

Do you need a Financial Cookbook? That's a decision only you can make, but I can tell you, it will definitely decrease all those calls to the bank. This home management program is packed with 32 financial recipes. Each provides a powerful financial tool to aid in making those all important tough financial decisions. To name a few there are recipes to aid in evaluating savings deposits, making your savings last forever, long term investments, living from an IRA, mortgage schedules, loan interest rates, and leasing a car.

One thing you won't find with the Financial Cookbook is fancy graphics or sound. But, what Financial Cookbook lacks in looks and sound it makes up for in power and ease of use. Simply plug in your numbers and Financial Cookbook will take care of all those nasty mathematical formulas.

I decided to test the Financial Cookbook with my most important financial concern: planning my vacation. The toughest part of my plan was shopping around for the best rates on airfare and producing a total dollar figure required for my vacation. Then I loaded up my program, pressed return, and the index of financial recipes appeared on my screen. I figured I'd be able to put away \$150 a month. I wanted to know how much would accumulate over the course of one year with an interest rate of 3.25%. I selected Monthly Savings Deposits from the index of recipes, then filled in the fields requesting my monthly deposit, number of years, and interest rate earned. Next I told the program to compute and—voila, it provided me with a listing indicating the amount of interest I would earn and the total I would have in my savings account at the end of one year. I decided maybe I could spare another \$25 a month to add to my savings. Changing this figure was easy—I simply changed the value in the monthly deposit field and instructed the program to compute again. The new figures appeared almost instantly. Certainly faster than possible on a calculator. Your efforts can be printed out and/or saved to disk for future referencing. If needed, I could use the Cookbook to help me decide on whether or not to take out a loan and the best possible term for my budget. As you can easily see the possibilities are almost endless. Owning the Financial Cookbook is the next best thing to having your own financial consultant at home!

- Sherry Freedline

Photo Mover v3.0

by Rick Coleman; \$15.00; available from Rick Coleman, P.O. Box 44, Sheridan, WY 82801.

I use GEOS for most things that I do on my Commodore 64 and 128, and look for "time saving" programs because of all the projects I constantly have scheduled for my computer. Photo Mover v2.7 is one such program that I've almost taken for granted over several years of use.

The ability of this program to pick multiple selections when moving photoscraips between albums speeds up the process considerably, especially when compared to the process of single selections, and closing and opening albums between each choice as required by the standard GEOS Photo Manager.

As GEOS-TIM, host of the GEOS Conference Room in GENIE's Commodore Roundtable, I was recently pleased to have Rick Coleman as my guest. As I spoke with Rick about his upgrade (Photo Mover 3.0) I realized that GEOS users around the country would be interested in have a need for such a program—especially considering the improvements that have gone into this upgrade.

Photo Mover 3.0 is part of a Rick's Mover V3.0 package, which includes 40- and 80-column versions of both Photo Mover and Text Mover. Obviously, one is for photo scraps and the other is for text scraps. The 80-column display, the text scrap capability, plus the valuable addition of the CUT function are a few of the new features in this upgrade. The program can work with (or create) both V1.0 and 2.1 albums, and can

access up to 4 drives. In spite of all the features, the programs are very easy to use; and the author provides excellent documentation, enabling you to jump right in.

After opening Photo Mover, a dialog box appears listing the photo albums on disk. Photo Mover can scroll through as many as 100 photo albums, while the dialog box lists up to four drives including the disk names. This makes it easy to find the album and drive of choice.

After selecting an album, a window appears showing the first photo in the album. To the right of the graphic display are four command choices:

- 1) an UP arrow box for the next photo
- 2) a SELECT box for photo selection
- 3) a DOWN arrow box to chose the PREVIOUS photo
- 4) a TOGGLE box that can be clicked to pick all the photos in the album for moving, or cutting

Scrolling through photo scraps is achieved by clicking the NEXT or PREVIOUS box with the mouse. For faster operation, press and hold the UP/DOWN scroll hot key for a smooth scroll; this also saves wear and tear on the mouse button. All it takes to select photos while paging through the scraps is to click on the SELECT box when the scrap of choice is displayed.

After going through the album and choosing scraps, the pull down menu can be used to indicate whether a MOVE or CUT operation is desired; you can also select these options via 'hot keys' (C-M and C-C). Using the hot keys can be beneficial,

since they give you the power to perform operations quickly. The program remembers which photo scraps have been selected (up to 12K in 40-column, and 11.5K in 80-column mode) and will move those photo scraps to the album that you have designated.

The Destination dialog box gives you the choice of opening an existing album or creating a new 2.1 or 1.0 photo album; it also provides options for which drive you wish to work with. Photo Mover will then move the selected scraps to the designated album. If CUT is used, the program will delete the scrap from the source album after copying it into the destination album. If your destination disk gets full, Photo Mover will indicate this, and let you select another album. The program leaves 19K of free space on the disk so that there is room for the Photo Manager to work.

There are three functions that I use Photo Mover 3.0 for, including general album maintenance, creation of "project" albums, and as

an album photo scrap viewer.

The maintenance uses of the program include organizing albums by moving related scraps into appropriate albums, or cleaning up albums that have unrelated photo scraps. This makes it easy to keep related photos together.

Photo Mover lets you designate the first album as the "projects" album; in this role, it allows you to fill the first album on disk with the graphics you need for a current project. This is important since the first album on disk is the one first accessed by the Photo Manager. Having all your required photo scraps in the first album saves you the time needed to close that album, then select and open a new one. When you're done with a project, the first album can be cleaned up quickly by using Photo Mover to cut out the old photo scraps and get it ready to fill with the chosen photo scraps for your next project.

Photo Mover may double as a viewer because of the quickness with which it can move through

displaying photos. I timed a Photo Mover session in which I used the application for viewing a complete album of 14 photo scraps. The system I used included a C128 and a 9 MB RAMLink. Photo Mover took 9.36 seconds, whereas the standard GEOS Photo Manager took 17.62 seconds to view the same album. A second test using an album with 49 assorted sized scraps took 45.5 seconds with Photo Mover, versus 1 minute 12.31 seconds using Photo Manager. If you're looking through a number of albums, this could result in a large time savings. A lot of this time saving can be attributed to the fact that Photo Mover lets you scroll through the photos in an album by pressing and holding the UP/DOWN scroll key instead of having to use your mouse to click through each individual scrap.

The Text Mover 3.0 application operates in a manner similar to Photo Mover, but it manipulates text scraps instead of photo scraps. This can be very handy for setting up text albums for use with text formatting

programs such as ToolKit, which uses text scraps for document formatting. If you use the standard GEOS Text Manager on a regular basis, then Text Mover could be very useful to you for organizing, cleaning, and viewing text albums.

In conclusion, the programs that come with Mover 3.0 are very versatile, and 128 users will especially enjoy the 80-column support. The dialog boxes have combined functions to increase the efficiency and speed of the program. The combination of the two programs to manipulate text and photo albums gives the Mover series a one-two punch for GEOS album usage. I'm completely sold on the usefulness of these utilities as the result of several years of using the Photo Mover 2.7 application that preceded the Mover 3.0 upgrade. This upgrade increases the ease of use, and efficiency of the program. Most GEOS users could probably find a niche in their computing setup for these programs.

-Timothy R. Hewelt

The Compleat* Walt Harned!

THE MOST AMAZING ART OFFER EVER!

During *LOADSTAR's* first ten years we have been proud to publish 24 of Walt Harned's slideshows and multimedia events. Now we've gathered them into one huge collection: **seven 5.25 inch disks or three 3.5 inch disks!** -- and it's yours for the incredibly low price of \$20. There are over **250 pictures** in the collection, including some that have never been published. That's \$20 total for the greatest one-man collection of art on any computer platform! Don't wait! These prices won't last forever.

Call *LOADSTAR* at:

1-800-594-3370

or send \$20 to:

LOADSTAR HARNED COLLECTION

P.O. Box 30008

Shreveport, LA 71130-0008

5.25-inch disks order #070425

3.5-inch disks order #070423

*obscure ten-dollar spelling of "complete."



GAMES

MINI VIEWS



Crazy Cars

Titus

Available from SSI

Crazy Cars is the predecessor to *F40 Pursuit Simulator*; these games are very similar in appearance and play. In *Crazy Cars* you'll participate in the "American Cross Country Prestige Cars Race". This crazy race is comprised of six courses with scenery from Arizona, Florida, Malibu, the Mountains, New York, and even Space Shuttle territory.

Your car is controlled with either a joystick or the keyboard, and you'll begin the race driving a Mercedes 560. Complete the first three challenges of the race and you'll receive a Porsche 911! Do well with the Porsche, and you'll soon be driving a Lamborghini Countach. The honor of driving a Ferrari GTO is only awarded to the world's top drivers.

The goal of the game is quite simple: complete your challenges before time runs out; believe me—this is no easy task. Colliding into other nearby cars will definitely slow you down, resulting in a loss of time. Your speed will also rapidly decrease if you accidentally drive off the track.

Playing the game, I discovered that hitting bumps at high speed send your car soaring through the air—and you can use this trick to pass your opponents! The inclusion of this little feature definitely made the game more fun. I also think that

the reward of a new car creates a real incentive for completing the challenges. Well, that Ferrari GTO is calling... *on your mark, get set, GO!*

- Sherry Freedline



F40 Pursuit Simulator

Titus

Available from SSI

F40 Pursuit Simulator places you behind the wheel of a flashy red Ferrari! You'll need every ounce of the Ferrari's horsepower to reach the finish within your allotted time. But time isn't the only challenge factor—the highways are loaded with police cars! Fortunately, your Ferrari's radar detector produces an audible beep when a patrol car is nearby.

F40, like *Crazy Cars*, consists of a series of challenges. Complete each route in the assigned time and you'll advance to the next. Most challenges contain new scenery along with tougher twists and turns to test your driving skills.

The scoring in *F40* includes a bonus; you begin with a number of points which vary from level to level, and as you drive the points decrease. Points remaining at the end of a stage are added to your score. If you achieve a new high score your name is placed on a top ten list which is saved to disk.

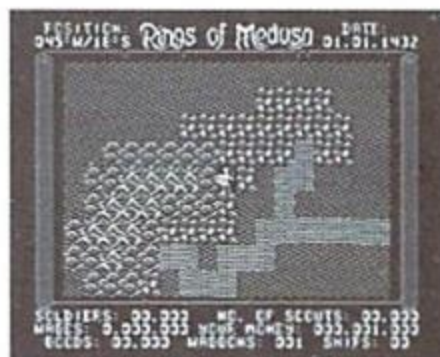
At first I had a great deal of difficulty with this game. I kept plowing into police cars which seemed to appear from nowhere.

This appeared to be due to lack of acceleration. Once I learned how and when to accelerate, there were fewer of these. I won't even discuss the signs alongside the road—somebody had to mow them down!

F40 Pursuit Simulator is a one player game, played with either a joystick or the keyboard—though the joystick is recommended. The graphics are fair for a game from this time period (1989-1990). The sound (mainly the radar detector beeping) did become annoying after a while.

This is definitely a great game for relieving tension due to rush hour traffic. How do you spell relief? C-R-A-S-H, right into the rear end of a police car!

- Sherry Freedline



Rings of Medusa

Digitel

Available from CMD

The famous mythological Medusa is the source of yet another intriguing adventure game for the C64. *Rings of Medusa* revolves around the Kingdom of Morenor, of which you are the prince. After years of adventuring through neighboring islands, you return home at the request of your father, the King. There's terrible unrest in your homeland; it's high time you accept your responsibilities as Prince, and return home to restore peace to your land. Upon your return, you discover there's more than just a little

"unrest". You encounter hordes of refugees fleeing your country. It seems the balance between good and evil has dipped to the most sinister of levels. The armies of evil are led by none other than the queen of evil herself, Medusa.

There's only one way to defeat Medusa and restore balance. You hear of a magician who once defeated Medusa with the aid of five rings. These rings have since been hidden all over the country. Once you are able to obtain these rings and enlist the aid of a huge army, you'll have the opportunity to defeat Medusa.

When the game begins, you find yourself alone without an army, and with little money. One of the first things you must do is visit an allied kingdom to enlist an army. Because your ability to search and battle relies totally on the members of your army, the selection of your army is vital to your success in the game. You'll want to thoroughly read your manual for tips on this important decision.

Once you've selected an army you must begin your search for the rings, and battle any enemy forces you encounter along your way.

The game's graphics are nice, and it's very well documented in the accompanying manual. However, *Rings of Medusa* did disappoint me in a few aspects. First of all, there's no background music and no sound effects during game play—not even during battle! The battle scenes are solely text based. The addition of a few graphic battles would have added excitement to the game. But, all in all, this game is great for those of you that really love a good adventure game. *Rings of Medusa* requires you to plan everything from the contents of your army down to the very moves and equipment each member will use during battle. This

is certainly one game that will give you hours upon hours of enjoyment as you travel through the land of Morenor!

- Sherry Freedline



Last Ninja 2: Back With a Vengeance

Activision

Available from CMD

Activision's *Last Ninja 2* is everything the packaging claims and a whole lot more! This is indeed a quality game packed with puzzles to solve and plenty of arcade action.

To become a Ninja requires a discipline of martial arts and a commitment to self-perfection. A Ninja is virtually a self-contained killing machine. Therefore, when a Ninja turns bad, you have a real problem on your hands.

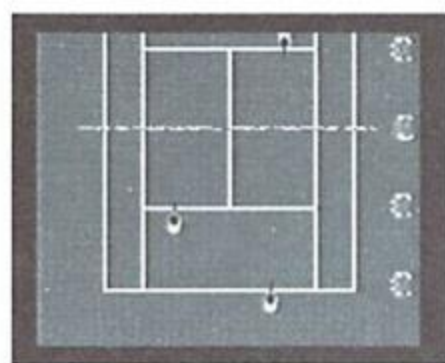
During the 12th Century, a purge nearly destroyed all of the existing Ninja. Now the Last Ninja has returned to New York City. He must gain entry into the evil warlord's fortress—even if he has to fight every step of the way. You, of course, control the Ninja.

From the very first screen, you are treated to superb graphics and music; the latter can be turned off at your command. Progress through the game by battling enemies and solving puzzles.

The toughest aspect of the game is learning to use the joystick to produce the desired moves. The joystick is used to command the Ninja to kick, punch, duck, stab, slash, parry, throw, and even do somersaults. It does take time to get a handle on accomplishing all of these moves. But, once you've mastered control (as any Ninja must!), there's no end to the fun challenges that await you.

I must admit I wasn't really sure I'd enjoy this game; I was really surprised when I began to play *Ninja 2* because I loved it! Now you must remember I'm female... Ninja-style fighting games don't rank highly on my list. Yet, I enjoyed this game immensely. Although thinking about it, when you mix good graphics, entertaining music and a challenging adventure together—there's not much left to dislike!

- Sherry Freedline



Tie Break

Digitek

Available from SSI and CMD

Now you can play your favorite outdoor sport indoors—day or night, rain or shine with *Tie Break*.

Tie Break tennis requires quite a bit of practice to master, and is fully equipped with options for everyone from the novice to the master tennis player. You may choose to compete in the World Tournament, a Tournament with a friend, or to brush up on your tennis skills in Training.

The World Tournament allows you to experience the thrill of competing in Wimbledon, The French Open, The U.S. Open, The Australian Open, The Masters, and The Davis Cup. These singles matches may be played with up to 16 players—any of which can be you, your friends, or choose from 16 computer opponents. Human players can even choose their own racquets, categorized by string tension and weight. In the event of a match being played between two computer players, you are given the option of watching the match. Completing the World Tournament requires quite a bit of time; fortunately, you can stop the action

and save the contest for later.

The Tournament option lets you play among your friends. As in the World Tournament, you may save your tournament to disk (up to three tournaments may be saved). The Tournament provides all the same options as the World Tournament, plus gives you a choice of four different playing surfaces.

Training lets you practice both singles and doubles matches. The singles matches are played against your choice of one of the 16 computer players, or against a friend. Doubles matches may be played against all computer players, or with a friend and two computer players. I found the easiest way to learn to play this game was by choosing to play a doubles match in Training mode.

As you can see, this game is indeed packed with a lot of options. The manual provided is excellent, and the graphics are great, providing you with a bird's-eye view of each match. There's even someone to chase after those loose balls! Even if you're not a tennis player, you can't help but enjoy *Tie Break*.

- Sherry Freedline



Conflict in Vietnam

Microprose

Available from SSI and CMD

The War in Vietnam will long be a subject of debate in American history. *Conflict in Vietnam* to provide a real-time simulation of the Vietnam War.

You'll control your choice of an opposing army, issuing commands to your units to determine the outcome of the battle. It is hoped that as a result of these exercises you will gain a deeper understanding of the choices made during the Vietnam War.

Conflict in Vietnam includes five simulations of actual battles fought during the war. You can further select from several actual situations during one of these battles, or from other variations that offer differing play times and hypothetical scenarios. You can play against the computer or a human opponent, or even act as a spectator while the computer takes both roles. Other options give you control over the speed and difficulty of the game.

The 110-page manual may appear to be a bit overwhelming at first; but upon reading the first page, you'll be directed to skip ahead to page 40 which contains a tutorial. This tutorial walks you through Prelude: Dien Bien Phu, 1954. This was the final assault by Viet Minh. Unfortunately, this was an impossible situation for the French, and your chances of coming out of this battle as the victor are slim to none. But, this battle merely serves as an introduction to the game. The tutorial goes on to walk you through your options of removing your units from the map, identifying patterns of terrain and placement of French Forts, viewing status reports of the Viet Minh units, issuing commands to your army, checking the status of your men and finally viewing the awards ceremony at the end of the simulation.

The colorful graphics are of the type you've probably seen in many adventure games. You'll be hard pressed to find one detail missing from *Conflict in Vietnam*. Even the passing of time is easily noted as you watch the screen colors change from bright daylight colors to darker nightfall colors.

This game will provide you with hours upon hours of challenging simulation. You will, however, need to play this game several times before you're comfortable with the numerous commands and options. Just remember that practice makes perfect, and in this case practice can even be fun!

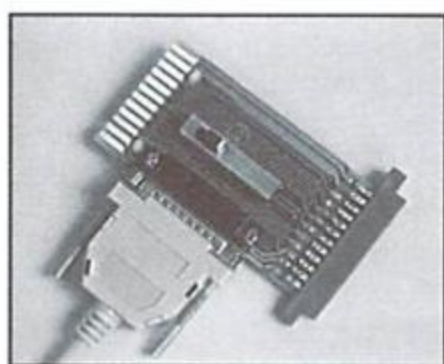
- Sherry Freedline



HARDWARE

IN REVIEW

Simple But Effective Hardware: geoCable II & Screensaver Deluxe



geoCable II

\$29.00 (6 ft.), \$34.00 (15 ft.); Creative Micro Designs, Inc., P.O. Box 646, East Longmeadow MA 01028; Orders: (800) 638-3263; Info: (413) 525-0023.

What's a geoCable II? It's a cable which fits into the Commodore 64 or 128 User Port, and allows you to directly attach standard printers equipped with a Centronics parallel port to your Commodore. The geoCable II takes this a step further, and allows you to have access to other devices that also use the User Port, like a Commodore compatible modem. It comes with a built-in pass-through port, and a switch so you can select between the two devices.

geoCable II arrives with a disk, 4 page manual, a standard 6 foot 'PC' cable, (Centronics on one end and a DB-25 connector on the other), and an odd looking green board which plugs into the User Port.

The Pass-through port for adding other User Port devices is directly across from the User Port connection on the board. Two plastic thingamabobs act as "feet" on the pass-through end of the board so it

stays level on the desk, doesn't put stress on the board, and keeps it at the correct height for adding other devices to it. A switch to select between the Pass-through port and printer sits in the center. The connector for the printer is on the left side of the board, where it won't interfere with other cables going into the rear of your computer.

I asked if the geoCable II I received was a prototype, because I expected the board to have a hard plastic case around it. I was told that this would have added to the cost of production, which would have been passed on to the consumer. In other words, it isn't pretty, but it does the job.

Installing geoCable II took under a minute, as it simply connects to the User Port, then the cable is connected to the board and then the printer.

GeoCable II comes with a disk which includes BSW (Berkeley SoftWorks) printer drivers on one side of the disk, and several PD printer drivers on the other disk side. I had no problem locating a printer driver to use within GEOS for the cable, and used the README file on the first side of the disk as a test file to print. There was nothing extra for me to do within GEOS aside from changing my printer driver to one which would work with the cable. The README file simply lists the printers on the first side of the disk, and offers suggestions for the various printer drivers. The disk also

includes LW Fonts for use with the Apple LaserWriter printer, and a couple GEOS Public Domain utilities, such as WrongisRight which lets you convert ASCII or Petascii text files into GEOwrite files, and MacATTACKII, which converts geoPaint files to MacPaint files and vice versa.

A note on the last page of the Users Manual explains that the only change needed to use geoCable II with Perfect Print LQ consists of replacing the current connect file (Perfect Print's name for printer drivers) with one of the Connect GC files which are included with Perfect Print. Once more, I had no problem changing files and found three which would function with my 9-pin printer and the geoCable. The most notable speed difference while using the cable was while printing using Perfect Print LQ with a 24 pin printer. The speed and the results were quite pleasing.

Other programs, like Paperclip, Superbase, Superscript, and The Write Stuff (with program modifications) can also use the geoCable. I've found for my own uses, that I've kept my regular printer Interface connected to the disk drive and connect it to the printer when I'm using a program which doesn't allow the use of the geoCable and switch as needed. I prefer the geoCable over the printer interface, but it's nice to have the option between the two.

I tested the geoCable with a modem connected to the pass-through port, and regardless of which device I used, printer, or modem, I had no conflicts between the two; unless, of course, I forgot to flip the switch to the appropriate device.

I was pretty excited about testing the geoCable, because I've tried homemade Centronics printer cables, without much luck. However, after using it for a couple weeks, it's a nice addition to my Commodore collection, but it's not that "exciting". It does exactly what it is supposed to, and does it well with no need to make any dramatic software changes. Programs which send only text to the printer (unlike GEOS), are able to send it much faster, which is a definite plus. Being frugal, I can understand why it doesn't come in a nice plastic case, but on the practical side, I'm not fond of having an exposed PC board hanging out of the back of my computer, either, where it's more exposed to the elements of dust and accidents. The pass-through port is a nice addition for use with Commodore compatible modems or modem interfaces. geoCable II isn't fancy, and isn't hard to adjust to having. In fact, it quite blended in with the use of the rest of my equipment without much effort on my part.

- Gaele R. Moranec



Screensaver Deluxe

by Henry Sopko; US\$19.95, CDN\$24.95; Henry Sopko, 2705 King Street East #212, Hamilton, Ontario Canada L8K-1Y4.

If you've spent much time browsing the messages on any of the online services, you've seen the question. You may have even wondered about it yourself. Again and again, I've seen it. Someone asks, and a few folks respond; then the question goes back into hibernation for a few weeks, perhaps even months. But it always pops up again. "What is this empty socket in my 128 for?"

For as long as there have been Commodore 128 computers, there's been a burning curiosity about what to do with this empty socket. It beckons to us to fill its void, to make our computers whole.

In answer to the question, several products have been created over the years in an attempt to fill this mysterious socket. The Superchips from Utilities Unlimited, KeyDOS by AntiGrav Toolkit, and the shareware product called "The

Servant". All of these were attempts to place some useful utilities and functions at the fingertips of 128 owners. And now, programmer Henry Sopko has created a new product to vie for ownership of that socket—a product far different from all others that have come before it.

The name of this product should have certainly given you a clue; Screensaver Deluxe is, of course, a screen saver. It's a simple function, over which much hoopla has been raised in other computing circles; but until now, screen savers have been mostly ignored by those of us who spend a lot of time using Commodore 64's and 128's.

Oh sure, there's Blackout for GEOS, and a number of BBS programs all with their own screen blanking functions—but these are few and far between, and generally they just blank the screen.

Screensaver Deluxe goes beyond this, at least for the 80-column mode of the 128. In this mode it can display I Paint (640 x 400 monochrome) or BASIC 8 (640 x 200, 8 x 2 color cell) picture formats. I Paint color

pictures can also be used, but are displayed in monochrome. In 40-column mode, Screensaver Deluxe simply blanks the screen.

To activate Screensaver Deluxe, you simply hold down the Control key while turning on or resetting your 128. This also selects the first of two built-in hi-res pictures for display. The second picture can be selected instead by holding down both the Control and Back-arrow keys during startup. Finally, you can load your own pictures (compressed file formats only) directly into your 128 and call a routine in Screensaver Deluxe to store tuck it away into high video memory.

Once Screensaver Deluxe has been activated, it checks for activity. If your computer sits idle for a minute, the selected picture will display (or the screen will blank if in 40-column mode). After another minute it will redisplay whatever was previously on your screen. It continues this cycle until interrupted by a key-press. You can change the length of the inactivity counter with a POKE command; in addition, a number of

other parameters can also be changed in this manner.

So how well does it work? Well, since it uses a small amount of RAM (43 bytes starting at \$0A36 in Bank 0), it isn't without compatibility problems. But the author has provided some utilities and hints for getting around many of the problems you might encounter. I also found that the startup keys were not compatible with RAMLink—but using programming methods supplied in the documentation, I quickly created a startup program to activate it instead.

While Screensaver Deluxe won't impress your PC and Mac friends who are used to flying toasters, stomping dinosaurs, and jungle men swinging on vines only to go *splat!* as they run into a tree; but it does maintain the integrity of your program while keeping your monitor from suffering the effects of burn-in caused by leaving the same image on the screen for too long. For that reason alone, it's a winner.

- Doug Cotton



Simple Internet

by Jeffrey M. Cogswell; \$16.95 (US); 162 pages, illustrated; Waite Group Press; ISBN 1-878739-79-4

The axiom is supposed to be "Don't judge a book by its cover", but in the case of *Simple Internet*, the comic book style cover speaks more about the inside of the book than the title. Don't let the title fool you—just



because it's a book about the Internet, that doesn't mean that it's going to be a dry, boring, reference book. This is a book to read (gasp!) away from the computer, and then use later while trying out some things you've learned.

In the humorous vein of Douglas Adams (*Hitchhiker's Guide to the Galaxy*, *Dirk Gently's Holistic Detective Agency*), Jeffrey Cogswell's *Simple Internet* tells the story of a private eye named Archie Finger who has to solve the mystery of a missing person by finding and acting on clues found on the Internet. The only problem is that Archie doesn't know anything about modems or the Internet and has to learn along the way. And he's not overly fond of using computers, either. While he's learning, the reader also learns.

Although the book assumes either DOS and MAC users are reading it, details of terminal programs are kept generalized; Commodore users should have no problem finding the appropriate equivalent function with their software. There's only one Internet function in the book in which the example is strictly for another computer type, in which the character downloads a game to play. *Commodore World* readers who want to test this for themselves after reading about it can find a CBM style substitute if they look in Issue #2.

Some aspects of this book are a bit over-simplified—such as a chapter explaining how hard drives and files are used, or how information is transferred between modems—but the basic information is excellent. Much of the information is repeated

more than a couple of times—a technique that helps us remember what we've learned that I found annoying at first, but learned to skim over if I already understood the concept. If you've never used a modem, and are curious about how it all works—but don't want to be hopelessly lost in mumble jumble—this might be a good book to start with. This book would also be good for those who may know their way around BBS's but are intimidated by the word "Internet". *Simple Internet* doesn't really assume the reader has any prior telecommunications knowledge and goes from there. Considering it's only 162 pages, it teaches a great deal while spinning a corny and sometimes hilarious story.

- Gaelyne R. Moranec



Graphic Interpretation

by Steve Vander Ark



MORE GRAPHIC CONVERSION TOOLS FOR GETTING THE MOST OUT OF GEOS

Graphics. It wouldn't be GEOS without them. Throwing a picture into the corner of your page is not an afterthought with GEOS, the way it is with many productivity tools. With geoWrite and especially with geoPublish, the graphics are integral to your work.

In the last installment of this column I talked about Commodore graphics. With the right conversion software, you can import most types of Commodore graphics into GEOS format and use them in your work. This capability is very important; it's a big part of why GEOS is the best productivity software around. But you don't have to stop there. You can find an enormous selection of graphics on-line in formats designed for other computer platforms, and many of these files can also be brought into the GEOS system. All you need to reel them in is the right software.

Of course, you do need a source for these files, a way to get them onto Commodore-readable disks. A disk full of exquisite clip art is useless if the disk is only readable by an IBM computer. The best way to import files from other platforms onto a Commodore disk is by downloading those files from a telecommunications service or a local bulletin board (BBS). I have several BBS's in my home city that have large graphics libraries which are free for the taking. These files are usually in the generic GIF format or in a high-resolution clip art format such as PCX or BMP. You can access IBM-formatted disks by using a program that allows your Commodore to read IBM-compatible disks. The premier such program is Big Blue Reader, an excellent utility from SOGWAP Software.



Probably the most common form of graphics image to be found is the GIF file. These are often very complex, some of them using up to 256 colors to create photo-quality graphics. There is quite a selection of GIF files on most BBS's and telecommunications services. That's because GIF is a format designed to be interpreted and displayed on any machine with the proper software. GIF was intended to be a generic format that every computer user could use to share graphics. There are several good GIF viewers around for the Commodore, some that even try to insert colors. The GIF program for GEOS tops them all; using this program will give you some of the finest graphic images you'll ever see on a Commodore.

The program is called geoGIF, written by Randy Weems. Instead of trying to translate the colors from a non-Commodore image into the limited Commodore palette, geoGIF uses dithering,

which means that the various colors are represented by a series of dot patterns and gray scales. The results are, well, phenomenal. The first time I saw a geoGIF image, I simply could not believe my eyes. It looked like a photograph, and since it was a geoPaint image I could insert that beautiful image right into my geoPublish documents. Desktop publishing on the Commodore would never be the same.

Another type of graphics you might encounter is the Macintosh MacPaint format. These are full-page monochrome graphics, somewhat narrower across than a geoPaint page. To transfer these images directly into geoPaint, use the program MacAttack II by Joe Buckley. I have seen some spectacular full-page artwork in this format, including some stunning Frazetta drawings. MacAttack does an excellent job of converting them over, as does Import Runner, a fine program I also mentioned last issue. Import Runner will also convert RLE images, a form of black-and-white artwork once popular on CompuServe.

I have a great collection of graphics for GEOS; I can usually find at least one picture to fit whatever it is I'm trying to create, and if I don't already have a piece of artwork to use, I can always find something in one of the above formats on GENie or a local BBS. Lately, though, I've spent quite a bit of time using the newest version of GEOS, the one that runs on my IBM compatible machine. Berkeley has done a superb job of upgrading the software to the IBM, along the way taking advantage of some of the power of that machine. GeoDraw, the offspring of geoPaint and geoPublish, combines desktop publishing and

“WITH THE RIGHT CONVERSION SOFTWARE, YOU CAN IMPORT MOST TYPES OF COMMODORE GRAPHICS INTO GEOS FORMAT AND USE THEM IN YOUR WORK”

word processing. I often wish, though, that I had my old collection of graphics handy to use with the new version.

It is possible to convert graphics from Commodore GEOS to PC/GEOS. Either one will require a connection, whether via the phone lines or by means of Big Blue Reader. Jim Collette, the noted Commodore GEOS programmer, has written a conversion utility called geoPCX to do make the conversion in formats, taking a GEOS image and turning it into a PCX file. That means that your GEOS image can be used with just about any IBM graphics program, since PCX is a very common format.

In the last two installments of this column I have talked about using graphics with GEOS. All

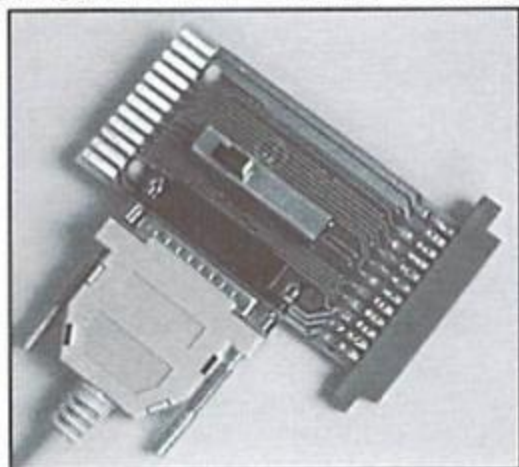
of the graphics we've been talking about will end up in GEOS in geoPaint or photo scrap formats. You can use these graphics in any GEOS application that supports graphic images, which is pretty much all of them except geoCalc. Some of them may end up with larger dimensions than the geoPaint work window, of course, and that will make it impossible to clip them with the built-in edit functions. In order to handle larger clips, you'll want to have a copy of ScrapIt v1.1 by Terry Van Camp handy. (This is not the same program as the ScrapIt! conversion utility by Michael Schell I mentioned in the last issue).

One more little note: I know I had a conversion program to convert PCX files directly into GEOS, but I can't seem to find it anywhere. I have scoured

my extensive collection of disks to no avail. I've been poking around through the various graphics support areas on GENIE and QLink but without any luck. I have found some very obscure programs, let me tell you, conversion programs that I had never heard of, but none of them is a GEOS program or converts directly into GEOS format. I finally gave up in order to get this column finished, but that doesn't mean I have forgotten about it. I swear I'll find that program, and when I do I'll let you all know right here. And if you happen to know the program I'm trying to remember, let me know, will you? My email address is s.vanderark@genie.geis.com.



GEOCABLE II Parallel Print Cable



The Most Advanced Parallel Print Cable Ever!

- **Uses Standard Cable**
Equipped with a female DB-25 cable connector to allow use of standard 'PC' printer cables.
 - **Switchable Pass-thru**
Allows connection of printer and other user port peripherals such as modems without conflicts.
 - **Faster Output**
Parallel printing offers up to a 40% increase in output speed.
 - **GEOS Drivers Included**
Includes GEOS drivers plus useful GEOS utilities like MacAttack II, WrongsWrite, and GEOS CONVERT.
- GeoCable II is compatible with GEOS, Perfect Print LO, Action-Replay MK VI, Superbase, Superscript, Paperclip III, and all software that supports user port parallel printing.

GEOCABLE-II (6 ft.) ONLY \$29.00
GEOCABLE-II (15 ft.) ONLY \$34.00
Shipping: US \$5.00, Canada \$7.00,
Foreign \$25.00.



Creative Micro Designs, Inc.

P.O. Box 646
East Longmeadow, MA 01028

Orders: 800-638-3263
Info: 413-525-0023

CMD Service Center

AFFORDABLE • FAST • DEPENDABLE

Call Today 1-800-638-3263

**Our Team of Technicians are Among the Most
Qualified in the Industry!
Why Settle for Anything Less Than the Best!**

We repair the following equipment: Commodore C-64, 64C, SX-64, C-128 and C128-D computers; 1541, 1541C, 1571 and 1581 Disk Drives plus CMD Devices. JiffyDOS Installations a specialty. All repairs warranted for 30 days. Minimum charge \$35.00 plus parts and return shipping. Contact CMD for authorization before sending any equipment.

Creative Micro Designs, Inc. P.O. Box 646 E. Longmeadow, MA 01028

KASARA MICRO SYSTEMS

The Commodore Chip and Parts Specialists

Save Money

on MONTHLY Specials and 90 DAY WARRANTY on all Parts and/or Repairs

Low Prices

on our LARGE INVENTORY of Commodore IC's, PS's, PC boards and Accessories

Quality Service

at GUARANTEED below suggested retail with quantity discounted prices

For Over 10 years

your RELIABLE SOURCE for C-64/128, Amiga and PC Chips and components

Orders: 800-248-2983 Info: 803-681-5511 Fax: 803-681-5510
Weekday Hours 9 AM - 6 PM EST

geoProgrammist

By Maurice Randall



GEOS PROGRAM MODES: 64 OR 128, 40- OR 80-COLUMNS?

So, you're thinking about creating a new application. This will be one that you will share with others. But will everyone be able to use it?

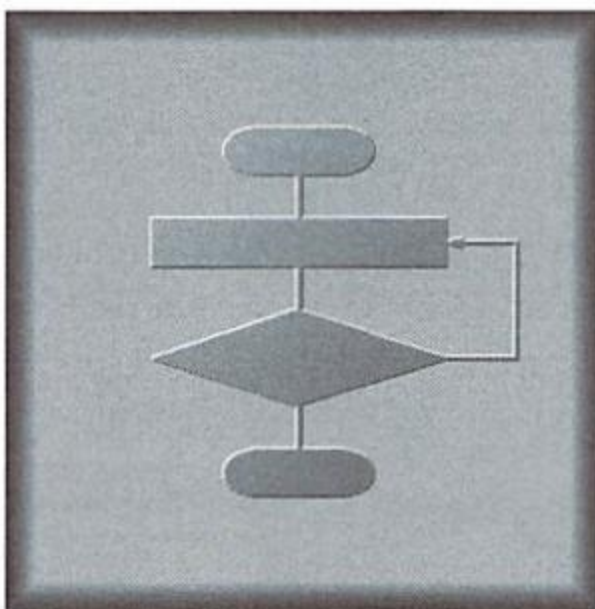
GEOS is a very flexible environment. Applications can be written to run on many different setups, or configurations. One of the variables that make a configuration different from another is obvious. One potential user of your program might be running GEOS on a 64, while another uses a 128. And to top it off, the 128 user might prefer 80 column mode to 40.

Before getting too far into the development of your program, you must decide which users you will be targeting this software at. If you do all of your development on a 64 and do not have access to a 128 for testing purposes, the choice is simple. Make your program work well on GEOS 64, make use of the GEOS kernel routines, and don't do anything that is specific to a 64. Your program will be usable to everyone since a 128 user will be able to run it in 40 column mode.

If you are a 128 programmer, you have a tougher decision to make. You could follow the same rules that the 64 programmer would, and simply stick to 40 column mode. This allows everyone access to your program including the 64 users. This is the easy way out.

You could, on the other hand, write your program to be used only in GEOS 128's 80 column mode. This would then limit its use only to those with GEOS 128 and 80 column monitors. This is not all that bad, either; you could make a very nice 80 column program. But you would leave all of the 64 users out in the cold.

So, we are now getting closer to making a decision here. Why not just write the program in one mode, 40 columns or 80, get it perfected, and



then write another version for the other mode. For the extremely elaborate programs, I would say that is the best way. The 80 column version would naturally only be used on a 128 and so you could take advantage of the additional features available for the 128.

Large programs take considerable time to develop. Most of the programs you will create will be small to moderately sized. So, why not just make your program capable of being run on any machine, and in either mode, 40 or 80 columns?

How do we do that? There are several ways. First of all, you will need to follow some basic rules; keep your code from being machine specific, and stick to the standard GEOS kernel routines through its jump table. Don't jump directly into the kernel itself.

Letting GEOS Do The Work

When GEOS 128 was developed, a method was employed within the system to allow a programmer to write a program that would run

in either 40 or 80 columns. GEOS will take care of all the dirty work for us. If we want to draw a rectangle in the middle of the screen, GEOS can put it in the middle of the screen in either mode, even though the coordinates for the rectangle would be different. Normally, the following code would perform this operation on a 40 column screen:

```
LoadB r2L,#80
LoadB r2H,#119
LoadW r3,#100
LoadW r4,#219
jsr Rectangle
```

On a 40 column screen a rectangle will be drawn perfectly centered. But on an 80 column screen, it will appear centered on the left half of the screen. By changing the code slightly, GEOS 128 will draw the rectangle perfectly centered on either screen. We do this by setting the high bit of every horizontal parameter. The following code accomplishes this:

```
DOUBLE_W = $8000
LoadB r2L,#80
LoadB r2H,#119
LoadW r3,#(100 | DOUBLE_W)
LoadW r4,#(219 | DOUBLE_W)
jsr Rectangle
```

In this code, r3 ends up holding a value of \$8064 and r4 gets \$80db. The high bit in each 16-bit word is set. GEOS 128 sees this and adjusts the values for the current screenmode. For a 40 column screen, r3 will end up with \$0064 (or 100) and r4 with \$00db (or 219). If the current

"SO, YOU'RE THINKING ABOUT CREATING A NEW APPLICATION... BUT WILL EVERYONE BE ABLE TO USE IT?"

screenmode is 80 columns, the values will be doubled; r3 will get \$00c8 (or 200) and r4 gets \$01b6 (or 438). The rectangle gets drawn exactly where we want it in either case.

FIXING THE RIGHT SIDE

A problem arises when our screen coordinates include the extreme right edge. This coordinate is 319. Using the above method, GEOS 128 will modify the coordinate to 638 for an 80 column screen. But we need to use 639. In this case, you would also set the next to the highest bit. This would be bit 14. The following code will clear a screen no matter which mode is being used:

```
DOUBLE_W = $8000
ADD1_W = $4000
lda #0
jsr SetPattern
LoadB r2L, #0
LoadB r2H, #199
LoadW r3, #0
LoadW r4, #($319 | DOUBLE_W | ADD1_W)
jsr Rectangle
```

Basically, by setting bits 14 and 15, a value is always doubled plus one. It doesn't have to be the right edge coordinate. This method can be used for any portion of the screen if needed. Some parameters only involve 8 bits instead of 16. The same rules apply however. When drawing a bitmap, GEOS must begin on an 8 pixel boundary. So the coordinates will range from 0-39 or 0-79. You can use the 40 column coordinates and set bit 7 of the value that is passed to the GEOS routine. One of the parameters that BitmapUp requires is passed in r1L. If you wish your bitmap to be placed at the midpoint of the screen, r1L should contain a value of 20, or in this case a 20 or'd with \$80 (use an equate such as DOUBLE_B = \$80).

Problems, Problems!

All of this works so nice and yet we are faced with a major problem. We can't use any of this in our programs. Unfortunately, GEOS 128 wasn't even thought of when GEOS was developed for the 64. If a program is written in this manner, with high bits set for the screen coordinates, and if this program is run on a 64, the machine will crash. GEOS 64 was not written to handle this function. It runs in 40 column mode only. If you limit your program to 128 use only, then this method is ok. But keep that 64 user in mind.

There are other ways to accomplish our task. Let's explore those ways in the next issue. We will also learn how to identify the system that is being used, as well as letting the system know if our program is compatible for it.



UPGRADE YOUR COMMODORE!!!			Refurbished Hardware		New Hardware	
Monitors	Drives	Other	New APORTEK Accessories			
1701 \$179.95	1541/C \$99.95	C64 - \$99.95	C24-2400 Baud (64/128)	\$118.95		
1702 \$179.95	1541-II \$129.95	64C - \$119.95	User Switch	\$44.95		
1802 \$199.95	1571 \$169.95	128 - \$179.95	Convert-A-Com	\$46.95		
1902 \$259.95	1581 \$179.95	128D \$329.95	New CMD/LMS Accessories			
1902A \$279.95	MSD-2 \$149.95	1660 \$29.95	JiffyDOS C64/SX64 "System"	\$69.95		
1084 \$319.95	1001SFD \$129.95	1670 \$49.95	JiffyDOS 128/128D "System"	\$79.95		
1084S \$339.95	B.I. Buscard-II	\$59.95	128 Kernel \$59.95	64 Kernel \$49.95		
Mono's \$49.95+	1530 Datasette	\$39.95	Additional JiffyDOS Drive ROM	\$39.95		
Miscellaneous			RAMLink Bs. \$239.95	c/w 0 MB \$289.95		
Books \$10-\$15	Printer Interfaces	\$49.95+	c/w 1 MB \$319.95	c/w 4MB \$449.95		
Prog's \$5-\$20	Epyx Fastload Cartridge	\$34.95	Real Time Clock (Optional) Add	\$29.95		
Repairs \$ASK	Super Snapshot v4	\$49.95	FD-2000 \$249.95	FD-4000 \$349.95		
1750 Superclone	REU 512K	\$199.95	New Super Snapshot v5.22	\$89.95		
Ask For Anything! We May Have It!			Send CDN Funds/15% USA Exchange			
J.P. PBM Products By Mail			15 day Warranty On Refurbished Hdwr.			
Box# 60515, N. Sheridan Mall P.O.			Allow 4-6 weeks for delivery			
Downsview, Ont. Canada M3L 1B0			Tax-Canada + 7% GST, Ontario +8% PST			
NEW! Catalogue Disk (64 Format) = \$2			Shipping: (\$0-\$25=\$4, \$26-\$99=10%, \$100-\$199=8%, \$200-\$499=7.5%, \$500+=6%, USA=15%)			

USED SOFTWARE

We buy, sell, and trade used original software. Lowest prices for C64, C128, Amiga, and IBM. Mention this ad and your computer type for a free list. Call our BBS for a complete list within minutes.

BBS:
8N1 300-24.4k
616-429-7211

Call or write:
CENTSIBLE SOFTWARE
P.O. Box 930
St. Joseph, MI 49085
Phone: 616-428-9096

Ask for a list via Internet:
CENTSIBLE@DELPHI.COM

COMMODORE 64 PUBLIC DOMAIN

Business, Education, Games, Graphics, *since 1987*
Printshop, Music, Demos, Foreign *1,000+ Programs*
Languages, Utilities, Sports, More *24 hr shipping*

.29 Stamp for catalog OR \$2. for catalog & 30 Samples to:

64 DISK CONNECTION

4291 Holland Rd., Suite 562-W • Virginia Beach, VA 23452

I Paint™

"the MOST POWER for the BUCK"
- power that only AMIGA owners have enjoyed until now!
- pushes the C-128 to the EDGE of the graphics envelope!
- RUN

I = Interlace!
I = Incredible!

640 x 400 pixels ONSCREEN!
DOUBLE the resolution of any other graphics software!
Unique Interlace color blending and easy-to-use Palette allow
THOUSANDS of APPARENT COLORS!

Many powerful tools and features which CANNOT BE DUPLICATED by any other software!
The most dazzling and sophisticated graphics tool for the C128!
Supports 24 pin, COLOR, & LASER Printers, & RAM Expansion!

I Port™

1.5 I Paint Import/Export Manager
Now More Power!

Import GIF, Amiga IFF, & MAC files
Bring out the BEST in your 128 by bringing IN the best of other computers!
1000's of GIF images- created on PC's, Macs, Amigas, even SATELLITES --
await you on BBS's everywhere. Customize the IFF & GIF conversion palettes.
Import GEOS, Basic8, Doodle, Koala, & Print Shop
Improve on your best from other programs! Custom Doodle & Geos palettes.
Export I Paint to GIF -- show'em all what your 128 can do!
(I Port 1.2 owners: upgrade for just \$10 with return of your 1.2 disk)

Prices for U.S.A. Check or money order only. MN res. add 6-12% sales tax. Allow 2-4 weeks for delivery.

I Paint 1.5 39.95
I Port 1.5 29.95
SAVE! both 59.95

Living Proof, Ltd
Dept. C1
PO Box 80714
Mpls, MN 55408-8714

REQUIRED: C-128D (or C-128 w/64k video RAM upgrade)
I Paint: 1351 compatible mouse.

BASIC INSTINCTS

by Gene Barker

IMPORTANT: Please see the notes on entering this program located just before the listing before you actually start typing the listing into your computer.

Newcomers

In BASIC Instincts, we are building a large game named Starship Combat which spans across the last five issues for this year. This is the fourth installment of the series. Starship Combat is a science fiction strategy game written in Commodore BASIC v2 for the Commodore 64. In the process of building Starship Combat, we are developing our BASIC programming skills. Best of all, we're having fun doing it!

Although this column was initially intended for beginning BASIC programmers, we've moved quickly into a more intermediate level of BASIC programming. Nonetheless, beginning and experienced programmers are encouraged to follow along as well, and review Starship Combat's advanced use of subroutines, strings, and arrays.

What? You don't have the last three installments. Go get 'em! Call up Commodore World and order issues two through four. While you're at it, hold off on that Milli Vanilli album you were thinking about buying and get a subscription.

Notes

Starship Combat is a large BASIC program. As you type in Starship Combat, take it one section at a time. Read the comments for the section both in the article AND in the BASIC text. Try to get a general idea of what the section is accomplishing. See if you can follow how the section is using its variables (use the handy charts and variable definitions from issues two and three). If you see an unfamiliar BASIC statement, take a quick look at it in your BASIC manual. If you are still confused, move on to the next section; often times the next section helps explain the previous one. Above all, don't forget to BACKUP your work frequently!

About Installment Four

In this installment we focus on enabling the unimplemented items which were introduced in the last issue. For the Union we enable the Energy Stealer, Shield Kit, Cloaking Device, Generator, and the Sensor Array. For the Alliance we enable the Generator and Atomics. These changes add a great deal of excitement to the game. In the next and final installment, we will complete the game. But there's no need to wait. The Alliance is ready to beat your sorry Union fleet any time you have the guts to boot up.

Using Items

In the last installment, the only items the player could use were the Basic and Deep Scanners. Now that we have eight different items enabled (seven for the Union—only the Alliance would have the unmitigated gall to use Atomics), we must expand the "(u)use item" option to give the player access to all of these items. In this installment, once the player selects "(u)use item" the program displays a list of the ship's available items. The player then chooses which item he/she wishes to use and BAMPH—it's done.

STARSHIP COMBAT PART IV: THE BATTLE RAGES ON!

SENSOR ARRAYS - DETECT SNEAKY ALLIANCE SHIPS
ATOMICS - THE ALLIANCE STOOPS TO A NEW LOW
CLOAKING - NEW UNION CLOAKING DEVICE

Hiding In The Shadows

The Union is far behind the Alliance in cloaking technology. Despite this, the Union Destroyer has been outfitted with the Union's first effort at a cloaking device. Now the Union can give the Alliance a taste of its own medicine. Be aware that it takes a large amount of energy in order to build a cloaking field. Furthermore, a ship may not use any of its weapons while encompassed in a cloaking field.

While the Union may be behind in cloaking technology, it is the leader in methods of detection. With the Union's new Sensor Array, a Union captain can flood an entire sector with ion particles. This instantly disables all cloaking fields within the immediate area. It also infuriates Union Destroyer captains who happen to have their ships cloaked in the same sector.

Atomics

Beware of Alliance Frigates that are in trouble. The crews of these Frigates have been hand picked from the halls of the mad, and they are prepared to pay the ultimate price for victory, self-destruction. A Frigate captain won't hesitate to use her Atomics, should she believe that it will lead to a greater good. She will have her glory.

Hints

If you're low on energy use the Energy Stealer. Sometimes the Energy Stealer can be your best weapon. Especially since the Alliance makes heavy use of energy hungry cloaking devices. The Generator also works well for regenerating power points. Be sure that you only use the Shield Kit in emergencies. The Shield Kit will fully restore your shields but it will cost you (one energy unit per two units of shield regeneration). If you suspect a collection of cloaked Alliance ships approaching use the Sensor Array. The Sensor Array can be expensive in power units, but it plays a large part in the strategic side of the game.

Changes

We really did a great job of laying out the framework of Starship Combat in the first three installments. Now the programming becomes more fun. You will notice that several of the new features that we have added are just a couple of lines each. Yet, we have added a whole new dimension to the game. What a deal! But before we begin typing in the new lines, we better take a look at a couple of the new flags, variables, and routines.

FLAGS

- F0 Are there any Union ships in the current sector?
0 - NO
1 - YES
- F1 Are there uncloaked Union ships in the current sector? (targetable Union ships)

VARIABLES

- NI Number of items in the item list
 ITS() Item list (array of item names)
 ED Energy drain on the targeted ship (used by Energy Stealer)

ROUTINES

- Line Routine Name
 27200 Use generator
 27300 Use atomics if possible (Pop)

MAIN PROGRAM (New/changed sections since the last issue)

- Lines 100-199 (setup main game loop)
 - Comments now say "starship combat part iv"

Lines 200-299 (main loop for the game)

- Now also checks for a draw game
 Lines 400-499 (all Union ships are destroyed)
 - Added the text "You have lost." to the message

- Lines 500-599 (all Union and Alliance ships are destroyed)
 - New routine that handles a draw game

SUBROUTINES (New/changed sections since the last issue)

Lines 10400-10699 (game initialization routines)

- Lines 10400-10499 setup the item list

Lines 20000-24999 (process Union ship turn)

- Lines 20075-20199 redirects the GOTO to the new use item routine
 - Lines 20255-20299 add power drain for cloaked ships and improve the power check
 - Lines 20900-20949 add energy drain (ED) field to fire phasers routine
 - Lines 20950-20999 new check to make sure ship is not cloaked
 - Lines 21200-21299 inflict energy drain (ED) on the targeted ship
 - Lines 21300-21399 add drained energy (ED) to the firing ship's reserves
 - Lines 21400-21499 add energy drain (ED) field to routine and GOTO the new cloak check before asking for a target
 - Lines 21500-21599 new use item routine (displays item list, allows user to select an item, then jumps to the appropriate routine)
 - Lines 22100-22199 new energy stealer routine (note how it uses the modified firing routine)
 - Lines 22200-22299 new shield kit routine
 - Lines 22300-22399 new cloak/uncloak ship routine
 - Lines 22400-22499 new generator routine
 - Lines 22500-22599 new sensor array routine

Lines 25000-29999 (process Alliance ship turn)

- Lines 25000-25099 add new flag calculations F0 and F1 (don't allow Alliance ship to see cloaked Union ships) AND remove cloak drain (moved to update stats)
 - Lines 25200-25299 update routine to handle atomics for a Frigate AND to handle the generator for a Light Cruiser
 - Lines 25300-25399 replace wait in algorithms with calls to use generator
 - Lines 25400-25499 replace wait in algorithms with calls to use generator
 - Lines 26500-26599 improve the performance of the energy stealer
 - Lines 26600-26699 add initial charge in power for firing-up the cloaking device AND allow Union ships in the same sector to witness the cloak
 - Lines 26800-26899 allow Union ships in the same sector to witness the uncloaking of an Alliance ship
 - Lines 27000-27099 allow Union ships in the same sector to witness uncloaked Alliance moves AND if best Union opponent is cloaked and in the same sector effect repairs

- Lines 27100-27199 don't allow Alliance ship to target a cloaked Union ship
 - Lines 27200-27299 new generator routine
 - Lines 27300-27399 new atomics routine (Pop routine)

Entering the Program

Before entering this month's installment, load and run the CHK-LIST utility (located elsewhere in this issue). Once you have CHK-LIST loaded and ready, load your saved copy of Starship Combat from last issue. The listing in this issue only gives lines which have been added or altered. Finally, before you begin to add the new lines from this issue, there are a few lines which must be deleted from your previous version. You may remove these lines by typing the line numbers, one by one, following each with a press of the **(RETURN)** key. Here are the lines to delete:

Lines to DELETE: 25060



ERROR NOTICES

In the last installment of BASIC Instincts, we neglected to print three lines that should have been deleted before entering the new installment of the program. Before entering this issue's changes, please delete the following lines and re-save the program.

Lines to DELETE: 215 220 25185

Also note that lines 21130 and 21140 in Issue 3 showed an underscore ("_") character. These should each be replaced by a [BACK ARROW].

STARSHIP COMBAT

```
525c 115 rem starship combat part iv
5162 230 : ifns=0then500
887f 231 : ifnu=nsthen300
0ea8 422 print"(CRSR RT)You have lost."
27aa 500 rem-
011a 505 rem all ships are destroyed - draw
27aa 510 rem-
95eb 515 gosub11200
d57c 520 print"All Alliance and Union ships h
ave"
033d 525 print"(CRSR RT)been destroyed.(2 spa
ces)The game is a draw."
b274 530 goto425
acdf 10491 rem-
656e 10492 rem setup item list
662e 10493 rem-
3b24 10494 ni=8:dimit$(ni-1)
ef25 10495 forxi=0toni-1:readit$(xi):next
c137 10496 data "Scanner","Deep Scanner","Ene
rgy Steal","Shield Kit"
ca8d 10497 data "Cloaking Dev","Generator","S
ensor Array","Atomics"
9897 20110 onxtgoto20200,20300,20400,20500,21
500,20090,20800,20600,20900,21400
e1a3 20267 ifsl%(sh,10)=1thenpw=pw-1
4739 20268 ifpw<0thenpw=0
d785 20930 ed=0
7964 20950 rem-
14be 20955 rem make sure not cloaked
a832 20960 rem-
3fc8 20965 ifsl%(sh,10)=0then21000
4da2 20970 : gosub11300
c1b2 20975 : print"Can't!"
2d09 20980 : printoa$(2 CRSR DN)Ship is cloa
ked"
```

STARSHIP COMBAT (cont.)	
e175	20985 : goto21040
1fa9	21247 xt=sl%(tg,5)-ed:ifxt<0thenxt=0
ada7	21248 sl%(tg,5)=xt:ifxt=0thenxk=tg:gosub 11800:goto21300
5433	21315 sl%(sh,8)=tl:mp=mp-rm:pw=pw-rp+ed
2a09	21317 xt=ty%(sl%(sh,0),1):ifpw>xtthenpw=xt
88a1	21467 ed=0
5646	21470 goto20950
7964	21500 rem-
09e9	21505 rem use item
e7af	21510 rem-
898a	21515 gosub11300
52fe	21520 print"Use item:"
959a	21525 xx\$=oa\$+"{2 CRSR DN}"
722b	21530 forxi=0to3
93ff	21535 : xt=ty%(sl%(sh,0),xi+7)
3cce	21540 : ifxt=999thenxi=3:goto21555
72df	21545 : printxx\$("chr\$(xi+49)")"it\$(xt)
e893	21550 : xx\$=xx\$+"{CRSR DN}"
b628	21555 next
cda3	21560 printxx\$("{CRSR DN}({BACK ARROW})Ab ort"
1ae1	21565 getxx\$:ifxx\$=""then21565
98a4	21570 ifxx\$="{BACK ARROW}"thenreturn
868b	21575 xt=asc(xx\$)-49
4f84	21580 ifxt<0orxt>3then21565
4f08	21585 xt=ty%(sl%(sh,0),xt+7)
d6ce	21590 ifxt=999then21565
237f	21595 onxt+1goto22000,22000,22100,22200, 22300,22400,22500
9294	22100 rem-
f43e	22105 rem energy stealer
9294	22110 rem-
cb1d	22115 rp=2:rm=1:dm=1:tl=sl%(sh,8):ed=50
a349	22120 goto21000
36f9	22200 rem-
3ecd	22205 rem shield kit
43c2	22210 rem-
03bc	22215 xt=int((ty%(sl%(sh,0),2)-sl%(sh,6)) / 2)
115f	22220 sl%(sh,6)=ty%(sl%(sh,0),2)
b21b	22225 pw=pw-xt:mp=mp-1
4874	22230 goto20255
cb38	22300 rem-
087b	22305 rem cloak/uncloak ship
d09f	22310 rem-
b000	22315 xt=sl%(sh,10)
8f16	22320 ifxtthenxt=0:pw=pw-1:goto22330
01e3	22325 xt=1:pw=pw-50
dfee	22330 sl%(sh,10)=xt
ca5b	22335 mp=mp-1
cda1	22340 goto20255
1a6e	22400 rem-
a9e9	22405 rem generator
1a6e	22410 rem-
1598	22415 xt=ty%(sl%(sh,0),1)
6e8c	22420 mp=mp-1:pw=pw+25
1755	22425 ifpw>xtthenpw=xt
06c5	22430 goto20255
be03	22500 rem-
5f8c	22505 rem sensor array
be03	22510 rem-
fba9	22515 forxi=0tons-1
b493	22520 : ifsl%(xi,1)=xzthenxl%(xi,10)=0
4474	22525 next
088e	22530 mp=mp-1:pw=pw-25
0505	22535 goto20255
fed6	25042 f0=0:forxi=0tonu-1:ifsl%(xi,1)=xz thenf0=1:xi=nu-1
5703	25043 next

STARSHIP COMBAT (cont.)	
0d7c	25045 f1=0:forxi=0tonu-1:ifsl%(xi,1)=xza ndsl%(xi,10)=0thenf1=1:xi=nu-1
8bc3	25047 next
5c97	25050 ifflthengosub27100
cc77	25055 iff0andf2=0thenup=1:gosub11400:up=2
4b23	25212 ifflandf3thengosub27300
816b	25270 ifsl%(sh,0)=8then27200
aff7	25275 goto20800
ec00	25360 goto27200
4f6d	25440 : goto27200
2764	25450 goto27200
4d9e	26540 xt=sl%(tg,5)-50:ifxt<=0thenxk=sh:g osub11800:goto26550
333f	26550 xt=pw+50:ifxt>ty%(sl%(sh,0),1)then xt=ty%(sl%(sh,0),1)
fa64	26615 iff0=0then26635
7283	26635 sl%(sh,10)=1:pw=pw-20:mp=mp-1
4774	26640 goto20255
d482	26820 iff0=0then26840
5e26	27011 iff2orf0=0then27020
eeec	27012 gosub11300:printty\$(sl%(sh,0))
709c	27013 printoa\$("{CRSR DN}closes."
ea9a	27027 ifxz=sl%(xt,1)then26100
a722	27120 ifsl%(xi,1)=xzthenifsl%(xi,10)=0an dsl%(xi,0)>xtthenxt=sl%(xi,0):tg=xi
dc61	27200 rem-
3e84	27205 rem use generator
dc61	27210 rem-
1210	27215 iffl=0orsl%(sh,10)=1then27235
dac9	27220 gosub11300:printty\$(sl%(sh,0))
2b4e	27225 printoa\$("{CRSR DN}energizes."
faf9	27230 up=1:gosub11400
b853	27235 goto22400
780c	27300 rem-
a92a	27305 rem use atomics if possible
780c	27310 rem-
949e	27315 ifsl%(sh,0)<>7thenreturn
566f	27320 xt=0:yt=0
2bce	27325 forxi=0tonu-1
eda8	27330 : ifsl%(xi,1)=xzthenxt=xt+1
fb91	27335 next
6fbd	27340 forxi=0tons-1
7d0d	27345 : ifsl%(xi,1)=xzthenyt=yt+1
8fc2	27350 next
9d9a	27355 ifxt<ytthenreturn
4696	27360 gosub11300:printty\$(sl%(sh,0))
1cd0	27365 printoa\$("{CRSR DN}self destructs!"
e9e0	27370 up=1:gosub11400
769d	27375 xi=0
6d5b	27380 ifsl%(xi,1)=xzthenxk=xi:gosub11800 :xi=0:goto27390
8d1f	27385 xi=xi+1
d3c1	27390 ifxi<nsthen27380
57a6	27395 sys830:return

REMEMBER...
ALWAYS SAVE
YOUR WORK
BEFORE TRYING IT
OUT... JUST IN
CASE!

How to Type In Program Listings Appearing in Commodore World

While *Commodore World* currently doesn't make it a habit of publishing type-in programs, a number of our columns do require entering sample routines. For this purpose, we have created our CHK-LIST utility for the Commodore 64 and 128. This utility uses a 16-bit CRC checksum method to verify that you have correctly entered each program line, and that each of the characters in the program lines are in the correct order.

You'll notice that program listings appear with a column of values to the left of the program lines. These values are the CHK-LIST values and are not to be entered as part of the program. A similar set of values are generated by the CHK-LIST utility to allow you to verify that everything has been entered correctly.

Enter the CHK-LIST program from BASIC. You can use either a C-64 or a C-128 computer. If you use a C-128, it can be in either 64 or 128 mode. Be sure to enter each line carefully to avoid mistakes—until you actually have CHK-LIST working, finding errors in program entry won't be easy. After you have finished entering the program, be sure to SAVE a copy to disk before you attempt to RUN it, just in case. If you aren't familiar with how to save a program to disk, you can use the following command:

SAVE"CHK-LIST",8

CHK-LIST	
A454	10 F=ABS(PEEK(65533)=255):M=49152:IF THE
	NM=4864
6E2F	12 C=0:PRINT" (CLR/HOME)WORKING";
E350	20 READ:IFD=-256THEN40
AD20	30 C=C+D:IFD<0ANDF=0THEN20
3316	31 IFD<0THENEND=0-D:M=M-1
07F0	32 POKEM,D:M=M+1:PRINT". ";GOTO20
578A	40 PRINT:READCK:IFC<>CKTHENPRINT"ERROR I
	N DATA STATEMENTS!":END
0679	50 PRINT"DONE.":END
8D92	60 :
E7FE	49152 DATA 165,43,-45,133,251,165,44,-46
	,133,252
B2AE	49160 DATA 169,0,141,36,193,-20,169,147,
	32
CD50	49168 DATA 210,255,32,194,192,-19,160,0,
	140
C9CD	49176 DATA 37,193,-20,177,251,133,253,20
	8,3
2058	49184 DATA 238,37,193,-20,200,177,251,13
	3,254
EA9C	49192 DATA 208,3,238,37,193,-20,173,37,1
	93,-20
6C15	49200 DATA 201,2,208,1,96,200,177,251
E70E	49208 DATA 170,200,177,251,32,205,-50,18
	9,-142,169
6795	49216 DATA 6,133,211,-236,169,61,32,210,
	255
F80F	49224 DATA 169,32,32,210,255,160,2,177
9735	49232 DATA 251,32,213,192,-19,200,177,25
	1,32
0734	49240 DATA 213,192,-19,200,177,251,240,6
	,32
D99D	49248 DATA 213,192,-19,76,90,192,-19,173
	,191,192,-19
AC30	49256 DATA 32,167,192,-19,173,190,192,-1
	9,32,167

To use CHK-LIST, load it into your computer and type RUN. Make sure that any program you are currently working on is saved first, or start CHK-LIST before you begin typing in a new program. After you have CHK-LIST in memory and running, type NEW. You may now either load or begin typing the program you wish to have CHK-LIST check on. Whenever you want to check your program, type in the appropriate SYS command given below:

C-64 or C-128 in 64 mode: SYS49152
C-128 in 128 mode: SYS4864

Note that when typing in listings, some special characters will appear in braces. For example, {CLR/HOME} means that you should enter the Clear key, which is done by holding down the SHIFT key while you press the HOME key. Other times you may see a number ahead of the key name, such as {3 SPACES} or {5 CRSRL}. This means you should press the key indicated the number of times shown. Most special keys are easy to identify, since the text shown will generally match the text on the key. Exceptions are the space bar {SPACE}, and cursor keys which include directions ({CRSR UP}, {CRSR DN}, {CRSR L} and {CRSR RT}). Be sure to use the correct key combinations for color keys, such as <CTRL><2> for {WHT}.

CHK-LIST (cont.)	
B343	49264 DATA 192,-19,169,13,32,210,255,165
	,253
DF3A	49272 DATA 133,251,165,254,133,252,238,3
	6
A6E2	49280 DATA 193,-20,173,36,193,-20,201,20
	,240,3
936E	49288 DATA 76,18,192,-19,162,0,189,1,193
	,20
8C3A	49296 DATA 240,6,32,210,255,232,208,245,
	32
EB74	49304 DATA 228,255,201,13,208,249,32
6095	49312 DATA 228,255,208,251,76,8,192,-19,
	72
A001	49320 DATA 106,106,106,106,32,180,192,-1
	9,104
FAA2	49328 DATA 32,180,192,-19,96,41,15,170,1
	89
EBFD	49336 DATA 20,193,-20,32,210,255,96,0,0
E907	49344 DATA 0,0,169,0,141,190,192,-19,141
E8EA	49352 DATA 191,192,-19,169,33,141,192,19
	2,-19,169
A7D7	49360 DATA 16,141,193,192,-19,96,162,8,7
	2
6040	49368 DATA 41,127,77,191,192,-19,141,191
	,192,-19
D24B	49376 DATA 24,14,190,192,-19,46,191,192,
	-19,144
D52F	49384 DATA 18,173,192,192,-19,77,190,192
	,19,141
DCA6	49392 DATA 190,192,-19,173,193,192,-19,7
	7,191,192,-19
6032	49400 DATA 141,191,192,-19,104,10,202,20
	8,215
37C5	49408 DATA 96,13,80,82,69,83,83,32
9A2A	49416 DATA 60,82,69,84,85,82,78,62
AC90	49424 DATA 13,13,13,0,48,49,50,51
FE71	49432 DATA 52,53,54,55,56,57,65,66
017E	49440 DATA 67,68,69,70,0,0,-256,37944

SCSI MAGIC

by Doug Cotton

As promised some time ago, we'll finally begin putting some of what we've learned about SCSI commands to use. We will, however, take this a little slower while we start, just to make sure everyone gets up to speed. But before we jump into the programming, there are some corrections from our last installment that need pointing out.

As you should recall, our last installment was about SCSI errors; so as Murphy's law would have it, a couple of errors got by us in the article. First off was the opcode specified for the SCSI Request Sense command. The article stated incorrectly that this command has an opcode of 02. In reality, the opcode for Request Sense is 03. Apparently Mark was reading his own article when he further went on to present his command example, located about midway through the first column on page 51. This example should be changed to read:

```
PRINT#15,"S-C"CHR$(0)CHR$(0)CHR$(48)CHR$(3)CHR$(0)CHR$(0)CHR$(0)CHR$(27)CHR$(0):GOSUB20000
```

I've bolded the one character which needed to be changed from a 2 to a 3 in the example above.

There were also a couple of problems with the last example of the article, found near the bottom of the first column on page 52. That example had to do with getting the Logical Block Address of an error, and was presented as:

```
LB%=SB%(3)*65536+SB%(4)*65536+SB%(5)*256+SB%(6)
```

In checking out this line of code, I first noticed one thing right off—we're dealing with a pretty large number here, one that could easily get way too large to fit into an integer variable such as LB%. Therefore, LB% should have been a floating point variable instead; call it LB, without the % symbol.

I next noticed that the math presented here just didn't seem right—we've got an address spread over four bytes, which means that the high byte should be multiplied by 256^3 . This would be equal to 65536×256 ; not 65536×65536 ! So to make that line a lot clearer, and less prone to contain errors, I've rewritten it to read:

```
LB=SB%(3)*256^3+SB%(4)*256^2+SB%(5)*256^1+SB%(6)*256^0
```

Granted, raising 256 to the first and zero powers aren't necessary steps, but it's far clearer an example when presented as part of an article such as this. Later, when writing your own program, you can simply multiply SB%(5) by 256, then add SB%(6) if you want to reduce the code.

SCSI Commander

With the problems of last issue out of the way, let's move on to the first installment of our new program, *SCSI Commander*. We're not breaking any new ground here, so I'm going to be brief. The program consists mainly of a couple of subroutines; one to handle reading SCSI blocks, and a set of routines for dealing with SCSI errors. In addition, there's a very simple front end at this point for simply instructing a CMD HD to read a SCSI block. Once the block is read, the program checks for errors, displays any appropriate messages, then quits. We'll make some improvements in the front end as the program evolves, but for now it serves the utilitarian purpose for which it was intended.

Since the code in the subroutines has all pretty much been covered in past installments, I won't give a line-by-line breakdown at this point. Just enter the code, study it, and play with it a bit. Since it only reads, you can't do any real harm. Try reading a block that's obviously way out of range of your current HD to see the error routines in action, and be ready for some major additions to the program in our next installment!

SCSI COMMANDER	
c4b0	10 rem -----
2334	20 rem scsi commander v0.10
059b	30 rem copyright 1994
d893	40 rem creative micro designs, inc.
70e2	50 rem -----
8d92	60 :
1bc2	70 dimsbs(27):bl=0:bh=48
7dfe	80 cc(1)=15:cc(2)=14
4cff	90 :
5560	100 rem menu
b13d	110 print"(CLEAR/HOME)source"
34e6	120 print "{6 CMDR t}"
4181	130 input"(c)ommodore device :";s1
cbfb	140 input"scsi (d)evice(6 spaces)";de(1)
22cb	150 input"scsi (1)un(9 spaces)";lu(1)
0210	160 print
0165	170 input"read scsi block(3 spaces)";ra
a3ad	180 input"number of blocks(2 spaces)";t
8d92	190 :
6d4e	200 a3=int(a0/(256^3)):a0=a0-a3*(256^3)
ca3f	210 a2=int(a0/(256^2)):a0=a0-a2*(256^2)
9d0f	220 a1=int(a0/256):a0=a0-a1*256
d35c	230 :
52c1	240 l1=int(l0/256):l0=l0-l1*256
4cff	250 :
74d6	260 cd=1
fdc0	270 :
c4c9	280 gosub1000:gosub2000:gosub1100
3121	290 print
8503	300 printem\$
ec9a	310 ifex=0then350
7ab5	320 print"error key(4 spaces)";sk%

SCSI COMMANDER (cont.)

```

16ec 330 print"error code{3 spaces}:";sc%
867c 340 iflb<>-1thenprint"scsi address :";lb
b13f 350 end
3cad 360 :
28e7 1000 rem open source device
a8d8 1010 opencc(1),sl,15
f1bb 1020 return
0235 1030 :
bb09 1100 closecc(1)
0e4e 1110 return
c358 1120 :
e5d7 2000 rem read block
6d3e 2010 ss$=chr$(37)+chr$(lu(cd)*2^5)+chr$(
a3)+chr$(a2)+chr$(a1)+chr$(a0)
c369 2020 ss$=ss$+chr$(0)+chr$(11)+chr$(10)+c
hr$(0)
5355 2030 print#cc(cd),"s-c"chr$(de(cd))chr$(
bl)chr$(bh);ss$
bc1e 2040 gosub20000
4084 2050 return
cef1 2060 :
321e 20000 rem check for scsi error
49c9 20010 get#cc(cd),e$:e=asc(e$+chr$(0))
4c9a 20020 :
f124 20030 rem check for error
0999 20040 ex=0:em$="ok{20 spaces}"
1210 20050 ife<>0then20080: rem process error
0382 20060 return
1254 20070 :
9e6b 20080 ex=1: rem there is an error
0325 20090 ife= 2thenem$="scsi error{12 space
s}":goto20160: rem check condition
7f8f 20100 ife= 8thenem$="target busy{11 spac
es}"
82da 20110 ife=16thenem$="intermediate status
ok"
2be0 20120 ife=24thenem$="reservation conflic
t{2 spaces}"
3d0c 20130 ife=48thenem$="dos syntax error{6
spaces}"
5d4c 20140 return
4c9a 20150 :
c0c3 20160 rem check condition
4e01 20170 ss$=chr$(3)+chr$(lu(cd)*2^5)+chr$(
0)+chr$(0)+chr$(27)+chr$(0)
fa5e 20180 print#cc(cd),"s-c"chr$(de(cd))chr$(
bl)chr$(bh);ss$
321c 20190 get#cc(cd),e$:e=asc(e$+chr$(0))
4754 20200 ife=0then20260
8df7 20210 :
edcf 20220 rem fatal error
c07f 20230 ex=2:em$="fatal error{11 spaces}"
f1de 20240 return
a36b 20250 :
f715 20260 rem fetch error data
eb2f 20270 print#cc(cd),"m-r"chr$(bl)chr$(bh)
chr$(27)
e8ba 20280 fori=0to26
73d1 20290 : get#cc(cd),b$
2e8d 20300 : sb%(i)=asc(b$+chr$(0))
7037 20310 next
fda5 20320 :
2ad1 20330 rem process error data
1b5b 20340 sk%=sb%(2)and15
781e 20350 sc%=sb%(12)
ee5e 20360 lb=-1:ifsb%(0)<127thenreturn
845e 20370 lb=sb%(3)*256^3+sb%(4)*256^2+sb%(5)
*256^1+sb%(6)*256^0
2d1e 20380 return
a36b 20400 :

```

HARD TIPS

BUILD A SEGA 'GAME PAD' ADAPTER

Article by Doug Cotton, Circuit Design by Mark Fellows

In the last issue of *Commodore World*, we printed a letter from one of our subscribers who wondered why 'game pad' controllers weren't available for the Commodore 64 and 128. We stated then that we'd tried such a controller (intended for the Sega Genesis), but that there were some slight differences that would need to be addressed.

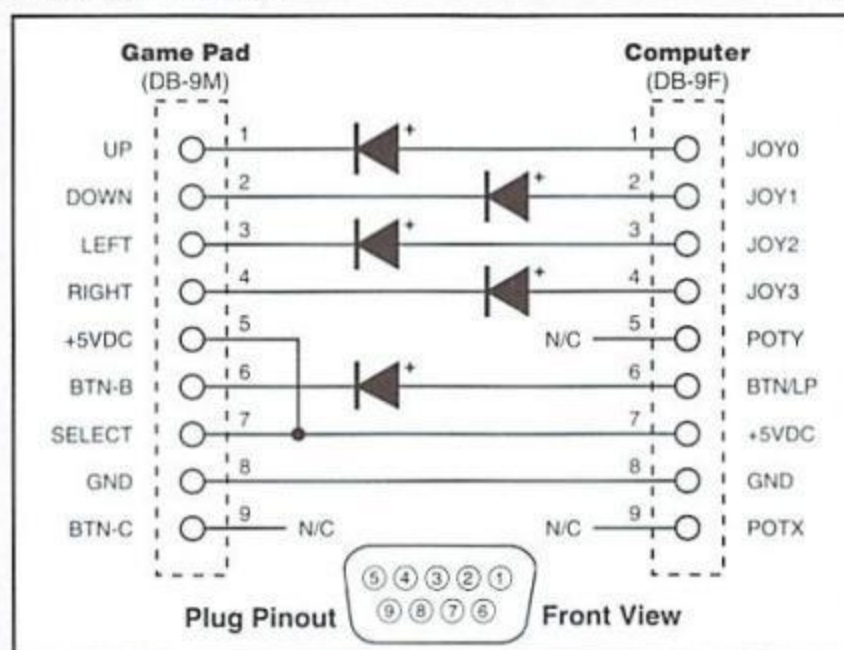
I'm pleased to say that we've come up with a very simple adapter that should allow any 3 or 6 button Sega Genesis controller to work on your computer without any possible conflicts or damage to your machine. The design requires five diodes, and depending on how you decide to implement the adaptation, may also require some additional connectors, cables and/or mounting box. You'll also need a soldering iron, solder, wire cutters, a little hookup wire, and a multimeter.

For the diodes, use 1N34A Germanium, or an equivalent. You can get a 10 pack of these at your local Radio Shack (#276-1123) for the paltry sum of \$1.19.

As I alluded to above, there are several ways to go about this project. The least expensive route would be to open the game pad (carefully—there are parts that can come loose and get lost—so hold the game pad face down while opening it) and use your multimeter to chart out which color wire goes to each of the pins on the cable's plug. Now de-solder the wires leading to pins 1, 2, 3, 4 and 6; solder the negative leads of the diodes (the ends with the lines) into the holes you removed the wires from; then solder the wires (correctly!) to the positive ends of the diodes. Be sure to disconnect the wires that lead to pins 5 and 9 on the plug, and solder a jumper on the board from the point where the wire from pin 5 was to the point where the wire from pin 7 connects. Re-assemble the game pad and you're all set. The 'B' button acts as the fire button—the other buttons have no function.

Alternative construction of the project would be to use a Sega controller extension cable, and splice a small project box into the middle of the cable with the diodes and other connections.

Finally, if you don't want to bother making your own, you can buy a converted game pad controller direct from CMD; see advertisements in this issue for details.



ADVANCED TECHNIQUES

SHORTCUTS TO "FLOATING" IN MACHINE LANGUAGE

by Chris Brenner

The machine language programmer is often faced with the prospect of using floating point math. This can take time and will ultimately add to the size of the program being developed. In some cases, a problem which seems to require floating point math can be solved by using integer math. Take the example of calculating the percentage of a variable. This can be handled with integer math simply by multiplying the variable by the percent value, and then dividing that result by one hundred. There are, however, many situations where integer math cannot be used efficiently. This leaves us with a couple of options. We can develop our own floating point routines, a laborious process, or we can use the floating point routines built in to the BASIC ROM. This is a desirable approach since not only will this keep the size of the code down, but it will take less time to develop a program using this method.

The BASIC ROM in the C-64 contains a fairly complete library of floating point routines. There are, however, some pitfalls when trying to access these routines directly from machine language. In this article we will look at some of the more common floating point routines, and things to watch for when calling these routines from a machine language program.

Before we get started, a quick overview is in order. There are two areas in zero page memory defined as floating point registers. These are known as floating point accumulator 1 and floating point accumulator 2. Throughout this article, these will be referred to as register 1 and register 2. Both of these registers are comprised of a one byte exponent followed by a four byte mantissa followed by a one byte sign. Most of the floating point math routines use these two registers, and return the result of the operation in register 1. Almost all of the conversion routines use register 1. There are only a couple that deal with register 2.

Change Is Inevitable

The first thing we'll look at is how to put floating point values into the registers. Let's start with integer conversion. There are a number of ways to convert an integer to floating point. The first method we'll examine is the conversion of an eight bit integer. This is very easy, we just load the A register with the number to be converted, and then call the conversion routine. The floating point value is placed into register 1.

```
ByteToFloat    =    $BC3C
               lda    #$07
               jsr    ByteToFloat
               rts
```

There is a similar routine available to convert a sixteen bit integer to floating point. This routine uses the A and Y registers to pass the sixteen bit number. As before, the floating point value is placed into register 1.

```
WordToFloat    =    $B391
Value          =    $1234
               ldy    #<Value
               lda    #>Value
               jsr    WordToFloat
               rts
```

Here's where things can get tricky. Both of the previous routines treat the integers as signed numbers. If we pass an integer that we are treating as an unsigned number, and it just so happens that the high bit is set, the conversion routine will happily place a negative floating point value into register 1. This can produce unexpected results, not to mention the urge to throw the computer through the window because the program doesn't work right. The solution is to convert the integer as an unsigned number. This requires a little more work, but can save us the trouble of tracking down the source of the problem, not to mention a costly window replacement. In this example, we'll convert the unsigned value \$9FFF to floating point. This method requires the unsigned sixteen bit value to first be written into the first two bytes of the mantissa for register 1. Note that the high byte is stored before the low byte. This differs from the standard 6502 little endian byte ordering. Next, the X register must be loaded with the exponent for the sixteen bit number. Setting the exponent to #\$90 places the binary point to the right of the least significant bit of this integer, making it a whole number. And finally, the carry must be set so that our integer will be treated as an unsigned number.

```
UWordToFloat   =    $BC49
Mantissa1      =    $62
Value          =    $9FFF
               lda    #>Value
               sta    Mantissa1
               lda    #<Value
               sta    Mantissa1+1
               ldx    #$90
               sec
               jsr    UWordToFloat
               rts
```

Telling It Like It Is

So far we've looked at how to convert an eight or sixteen bit integer to floating point. Now, let's put this knowledge to practical use. One of the most common problems facing the machine language programmer is turning a binary value into a decimal ASCII string. Fortunately, we have some floating point routines at our disposal to make this an easy process.

The only problem facing us here is that these routines trash the floating point registers. We will deal with this later. This example converts the hexadecimal number \$64 to the ASCII string 100 and prints it to the screen. The Kernal CHROUT routine is then used to print a carriage return.

```
ByteToFloat      = $BC3C
FloatPrint       = $BDD7
CHROUT           = $FFD2
lda # $64
jsr ByteToFloat
jsr FloatPrint
lda # $0D
jsr CHROUT
rts
```

We probably won't always want to print the result to the screen, so there's another routine available which places the string in memory at \$0100.

```
ByteToFloat      = $BC3C
FloatToString    = $BDDD
lda # $64
jsr ByteToFloat
jsr FloatToString
rts
```

Up until now we have been dealing with whole numbers only. Of course, this will not always be the case. As you may have guessed, there is a way to convert an ASCII string to floating point. This null terminated string can be a fractional number, and can even be in scientific notation. The StringToFloat routine uses the CHRGET routine to parse the ASCII string. We must do some preliminary work, which involves setting the CHRGET pointer to the first character in our string, and then entering at CHRGET to retrieve the first character. As usual, the floating point value is placed into register 1.

```
CHRGET           = $79
StringToFloat     = $BCF3
lda #<String
sta CHRGET+1
lda #>String
sta CHRGET+2
jsr CHRGET
jsr StringToFloat
rts
String           .byte "37.321",0
```

Save It For A Rainy Day

There are times when we will want to save the contents of a floating point register, so that we can use that number later on. A good example is with the previously described binary to ASCII conversion routines. Here we can see how to save register 1 to memory.

```
Float1ToMem       = $BBD4
ldx #<Save1
ldy #>Save1
jsr Float1ToMem
rts
Save1             .byte 0,0,0,0,0,0,0,0
```

There is no routine available to transfer register 2 to memory. If we want to save register 2, we must first copy it's contents to register 1 and then transfer register 1 to memory.

```
Float2ToFloat1    = $BBFC
Float1ToMem        = $BBD4
jsr Float2ToFloat1
ldx #<Save2
ldy #>Save2
jsr Float1ToMem
rts
Save2             .byte 0,0,0,0,0,0,0,0
```

When it comes time to restore the floating point registers, we can transfer these saved values back from memory. This time we have a separate routine for register 2.

```
MemToFloat1       = $BBA2
MemToFloat2       = $BA8C
lda #<Save1
ldy #>Save1
jsr MemToFloat1
lda #<Save2
ldy #>Save2
jsr MemToFloat2
rts
```

The Way We Were

Eventually, we will want to put a floating point number back into integer form so that we may deal with it in machine language. Depending upon the situation, we may also wish to round this value to the nearest whole number. The integer is returned in the mantissa of register 1. Remember though, the floating point mantissa uses big endian byte ordering. We will have to scan the four bytes of the mantissa from the highest address down to obtain the correct value.

```
RoundFloat        = $BE2F
FloatToInt         = $BC9B
jsr RoundFloat
jsr FloatToInt
rts
```

Cool And Calculating

Putting numbers in the floating point registers is pretty easy, but what about performing floating point math. As it turns out, this is also easy. The floating point math routines use both floating point registers as arguments for the function, and require that the A register contain the current value held in the exponent of register 1. The trick here is to use the floating point registers in the proper order. No need to worry about this for addition or multiplication due to the associative nature of these two operations. Subtraction and division, however, do make a difference. Let's first look at an example of floating point addition. The following code performs the operation 3+2 and places the result into register 1.

```
Float1Exp          = $61
ByteToFloat        = $BC3C
Float1ToFloat2     = $BC0C
FloatAdd           = $B86A
```

```

lda    #$03
jsr    ByteToFloat
jsr    Float1ToFloat2
lda    #$02
jsr    ByteToFloat
lda    Float1Exp
jsr    FloatAdd
rts

```

Floating point subtraction is handled pretty much the same way as floating point addition. The only difference between the two is the order in which the operation occurs. Register 1 is always subtracted from register 2. In this example, we can see how to code the statement $3-2$.

```

Float1Exp    =    $61
ByteToFloat  =    $BC3C
Float1ToFloat2 =    $BC0C
FloatSub     =    $B853
lda    #$03
jsr    ByteToFloat
jsr    Float1ToFloat2
lda    #$02
jsr    ByteToFloat
lda    Float1Exp
jsr    FloatSub
rts

```

Well that was fun, let's do some more. How about a simple electronics problem. Let's calculate the DC current for a 5 volt drop across a 4.7K resistor. The formula is $I=E/R$ where E is the DC voltage, R is the resistance, and I is the current.

```

Float1Exp    =    $61
ByteToFloat  =    $BC3C
WordToFloat  =    $B391
Float1ToFloat2 =    $BC0C
FloatDiv     =    $BB12
E            =    5
R            =    4700
lda    #E
jsr    ByteToFloat
jsr    Float1ToFloat2
ldy    #<R
lda    #>R
jsr    WordToFloat
lda    Float1Exp
jsr    FloatDiv

```

At this point, register 1 contains the calculated current flow through the resistor, which turns out to be 1.06382979E-03 amperes. We can turn this into something a bit more readable by converting to milliamperes. This is accomplished by multiplying by 1000, after which register 1 contains the calculated current flow in the form 1.06382979 milliamperes.

```

FloatMult    =    $BA2B
Multiplier   =    1000
jsr    Float1ToFloat2
ldy    #<Multiplier

```

```

lda    #>Multiplier
jsr    WordToFloat
lda    Float1Exp
jsr    FloatMult
rts

```

That covers the four basic arithmetic operations. In this final example, we will take a look at how to perform exponentiation. As with subtraction and division, we need to make sure we use the floating point registers in the proper order. The following code will perform the operation 3^2 .

```

Float1Exp    =    $61
ByteToFloat  =    $BC3C
Float1ToFloat2 =    $BC0C
FloatExpon    =    $BF7B
lda    #$03
jsr    ByteToFloat
jsr    Float1ToFloat2
lda    #$02
jsr    ByteToFloat
lda    Float1Exp
jsr    FloatExpon
rts

```

The End Of The Rainbow

We've covered only a small part of what's available; there's much more to be explored. None the less, these routines will be a welcome addition to any machine language programmer's collection.



NEW

GAME!

Join Denny in his search for the evil Ghost,
in:

**DENNY'S
QUEST**

I

Adults and children alike will enjoy this game!
Explore caves, secret areas, graveyard and
desert in this colorful arcade/adventure/puzzle
game for the C64.

ONLY \$9.99 !!!

- * Add \$3 s/h outside U.S.A.
- * U.S. funds only please!
- * Send this ad for \$5.00 off the upcoming
Denny's Quest II.

PLEASE SEND CHECK OR MONEY ORDER TO:

**SUNRISE SOFTWARE 439 PARK LANE
MASSAPEQUA PARK, NY 11762**

Peripheral Vision

By Jim Butterfield



UNDERSTANDING THE INPUT/OUTPUT STREAM

Commodore 8-bit computers have a pretty simple I/O (input/output) system. From a programmer's standpoint, there's a single path through which all data enters the computer, and a similar path on which all data leaves. These two logical paths are called "streams". So... these computers have a single input stream and a single output stream.

The input and output streams have "default" connections. Input comes from keyboard/screen, output goes to the screen. But either path can be switched away, to a "logical file". And this switching can take place so quickly that the computer will seem to be dealing with many I/O devices at the same time. Figure 1 shows the way it works.

Information Flow

This is a useful concept. No matter which I/O device you are working, data flows over a common path in a standard way. For example: if your BASIC program commands `PRINT 8+9`, you know that the following goes to the screen: a space character, then a numeric 1 (ASCII 49), then a numeric 7 (ASCII 55). You'll see 17 printed on the screen, of course. And if your program says `PRINT#1,8+9` the same characters will flow to whatever device belongs to logical address 1—of course, the program will previously have opened the file. No matter whether logical address 1 is hooked to a printer, a disk drive, a communications line, or some other facility, out go those same three characters.

In the example above, there's a fourth character. When the output stream is set to its default destination (the screen), BASIC will send a cursor-right character behind the other three. If the output stream has been switched, a space character goes out instead. In either case, BASIC

only sends the extra character after printing a number, not after printing a string.

We see the same kind of action on the input side. BASIC commands `GET` and `INPUT` both draw from the input stream. `GET` takes one character; if no character is available, `GET` does not wait, but instead returns "nothing" (a "Null String"). `INPUT` keeps taking characters until it sees `RETURN`, at which time it edits the line of data before passing it to your BASIC program.

Again, the action differs slightly if the input stream is set to its default source (keyboard/screen). In this case, `GET` goes directly to the keyboard input buffer, where `INPUT` takes information from a line on the screen. And, of course, the prompt string that `INPUT` may use (e.g., `INPUT "YOUR NAME";N$`) makes sense only when the computer is hooked to its default input stream.

Although I'll give examples in BASIC, the same principles apply for programs written in other languages. In machine language, for example, the subroutine at `$FFD2` sends a character to the output stream, wherever it might be connected. Other subroutines arrange to do switching of the I/O streams.

What That # Symbol Does

When the computer encounters a BASIC line such as `PRINT#4,"HELLO"`, it takes the following action. First, it switches the output stream to logical device number four. Then it sends `HELLO` (with a following `RETURN` character) to the output stream. Finally, it restores the I/O streams to their default values.

Similarly, a statement such as `INPUT#2,X$` triggers several events. First, the input stream is switched to logical file 2; then input is taken from

the input stream, up to the next `RETURN` character; then the I/O streams are restored to their default values. After performing the I/O action, the `INPUT` command does a few more things. It edits the line it has received, stripping off leading `SPACE` characters, and perhaps even getting muddled if it sees a comma (,) or a colon (:) in the input data. The result goes to variable `X$`, in our example command.

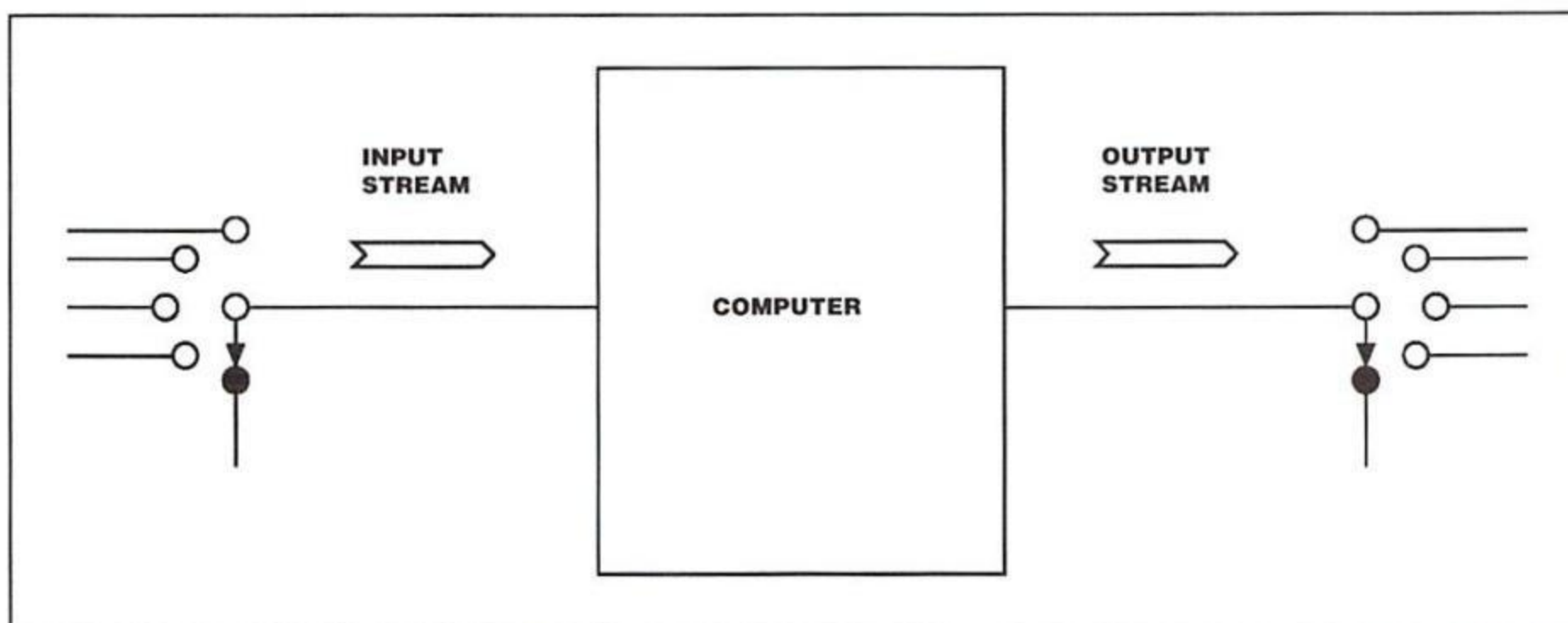
Note that whether you use `PRINT#`, `INPUT#`, or `GET#`, the action completes by restoring both I/O streams - input and output - to the default positions. This puts a crimp in your use of `CMD`, which would otherwise be a neat way of redirecting all output to a selected destination.

The CMD Command

You can switch the output stream directly by using `CMD` followed by a logical file number. This is popular (indispensable?) for outputting directory and program listings as hard copy. The procedure for a directory is:

- a) load a directory with a command such as `LOAD "$0",8`
- b) open the output file, say, the printer, with `OPEN 2,4`
- c) switch the output stream to that file with `CMD 2`
- d) send the listing to the file with `LIST`
- e) restore the output stream with `PRINT#2`
- f) close the file with `CLOSE 2`

Note that step (e) shuts off the `CMD` redirection. What you print isn't important - in this case, it's a `RETURN` character only. The vital part is that `PRINT#` wraps things up by restoring the default I/O streams.



Many programmers have tried to use CMD in their programs, with doubtful results. Their objective is to switch the output stream so that everything goes to a selected device. This sounds as if it should be an easy way to put the printer into operation. The problem is this: any other INPUT#, GET#, or PRINT# will kick the system back to its default output stream.

And if the CMD-diverted program should stop or be stopped while CMD redirection is still in effect, the computer becomes rather clumsy. That redirection makes the system behave in non-standard ways. Output Taboos: Comma and TAB.

I tell BASIC programmers to stay away from two features of the PRINT command: the comma character and the TAB() keyword. They are poison when used with PRINT#, and clumsy even when used with PRINT. Get rid of them and avoid bad habits.

The comma character and TAB() both try to do the same thing: to position the cursor to a selected screen column. "Screen" is the operative word here: everything is calculated based on the screen cursor position .. even if the output is not going to the screen! Thus, PRINT "CMD";TAB(10);"MA";TAB(20);"01028" may look nice on your screen, but it will look WRONG when you change PRINT to PRINT# and try to send this to a printer or disk file.

I'd much rather see you code something like:

```
SS="
PRINTLEFT$ ("CMD"+SS,10);LEFT$ ("MA"+SS,10
);"01028"
```

This continues to look fine when you change PRINT to PRINT# so as to send the output to a printer.

We'll talk again about this kind of formatting. You can do nice, logical output to the screen, printer or disk using string manipulation commands. Look for it in a forthcoming issue. Writing Data Files.

The stuff above was to set the stage for helping you to write (and later read) data files. The most important thing to keep in mind about writing data files is that later, you're going to want to read them. Write them nicely, and you'll read them easily. So .. we'll talk about writing data by first looking at the problems that come with reading it later: the irksome INPUT# command.

The INPUT# statement is the most efficient one to use in bringing data from a file. But it has a number of eccentricities. It doesn't like to see

commas or the colon character; it gets wrecked if there are too many characters before a RETURN is seen; it may not do what you want if the data includes quotation marks (""); it strips spaces from the start of an input line; and it behaves badly if it sees a blank line.

There are ways around this, including never using the INPUT# statement. But for starters, here are some protective rules for WRITING data in such a way that the INPUT# statement won't get indigestion when reading it.

1. Never write a line of data longer than 88 characters (80 or early PET/CBM machines, 160 characters on the 128). The input line first goes into a buffer before it's delivered to your BASIC program. The buffer has a fixed size: exceed that size and INPUT# fails.
2. Avoid comma and colon characters. If you MUST have them, arrange to start the data line with a quotes character, CHR\$(34).
3. Keep away from blank data fields; substitute another character, say a slash, if there's no data.
4. Read on about avoiding TAB() and comma punctuation during PRINT# actions.

Visualizing Problems

When a programmer first tries to write data files, the following goof is likely to crop up. Within the "writing" program, there may be a line something like this:

```
PRINT#6,N$,A1$,A2$,M
```

And in the "reading" program there will be a corresponding line that goes:

```
INPUT#6,N$,A1$,A2$,M
```

It won't work. Let's see why.

The PRINT# statement is the major offender. To see what it does, visualize what would happen if we were sending to the screen. We'd get a single screen line something like:

```
JOHN    23 YORK  ST. PAUL  39821
```

And that's exactly what we'll write to the file: a single line of characters, terminated by a RETURN. The fields of data are badly separated: how can the computer tell whether the address is 23 York in St. Paul, or 23 York St.

in the city of Paul?

What happens when we try to input the data that was written to the file? Again, we can visualize events by looking at the equivalent INPUT statement which asks for data from keyboard/screen.

If you've ever tried INPUT followed by multiple variable names, you know it's clumsy. The user has two options. The first is to type in the variables, with commas separating the fields, thus: JOHN,23 YORK,ST.PAUL,39821. The second option is to type in a single field and press RETURN; the computer will then ask for more data. The fields can go in one line at a time; when all four are in, the program continues.

Our basic rule said: the information comes in from the input stream and is processed by INPUT(#) the same way, switched or not. So what the INPUT#6 wants to see is exactly what INPUT needs from the keyboard. That is, specific characters separating the fields: commas or RETURNS. In the example above, it gets neither, since we have written the file with only spaces separating the fields.

Fixing It

If we wish to write our data file with RETURN characters separating the fields, it's not hard. Sample coding:

```
PRINT#6,NS
PRINT#6,A1$
PRINT#6,A2$
PRINT#6,M
```

It looks neat and it works fine. As a matter of personal preference, I'd change the coding of the INPUT#6 statement to look the same (four lines instead of one), but it would work as originally given.

The other separation character that we might use is a comma. We could code:

```
PRINT#6,NS;" ";A1$;" ";A2$;" ";M
```

Again, this would do the job. I'd rather go the RETURN route, so as to stay clear of the 88-column line limit. But again, that's a personal preference.

Alternative: Columns

Another method of arranging your data is to put each field into selected columns. It's much like a punched card: for example, name in columns 1 to 12, and so on.

The "column" method wastes disk storage, with all those spaces filling it between fields. But it's very popular on other computer platforms, largely because there are so many sorting utilities that work with that type of data format.

Extracting the individual fields from data set up in this way involves use of the string functions: LEFT\$, RIGHT\$, and MID\$. But they are not hard when you get the hang of them.



MOVING?

Don't forget to let Commodore World know. Call or write with your change of address 6 to 8 weeks prior to your move so that you won't miss a single issue!

Mad Man Software

CKit 94!

It's Cool

CKit 94 is a powerful collection of backup utilities designed to take advantage of the expanded Commodore systems of the 90's. In fact the CKit is so advanced, we recommend it only for certain Commodore systems.

If You Have One Of These

Commodore 64, 64C, 128, or 128D

And One Of These

CMD RAMLink, PPI RAMDrive, or a 17XX REU with JiffyDOS

And At Least One Of These

Commodore 1541/1571/1581 or any CMD Storage Device

◆ YOU NEED THE CKIT 94! ◆

It's Mean

CKit 94 can view, select, and copy over 1,000 files! It can also copy entire 41/71/81 disks in ONE pass. It can even make the next copy directly from RAM. With the CKit you can squeeze over 700 files into an archive. Even more, you can squeeze your 41/71/81 disks and CMD partitions into backup files. All of this power is at your command through an easy to use menu driven interface.

File Utilities

Filemaster file copier and the Archiver file squeezer

Disk Utilities

Procopy disk copier and the 41/71/81/Native Boa disk squeezers

BBS Utilities

New Dissolver SDA maker and fast PD Decomps

It's Better

CKit 94 has 2 X faster and tighter compression than in previous versions. All of the utilities have been enhanced for power and speed. Plus, it has three new powerful utilities. And it takes full advantage of Commodore 128's and REU's. Wow!

Check Out The Support

- ✓ Commodore 1541/1571/1581 Drives
- ✓ CMD Hard Drives/Floppy Drives/RAMLinks
- ✓ PPI RAMDrives
- ✓ Commodore 128 VDC RAM Support (16K and 64K)
- ✓ Commodore 128 2MHz Enhanced Mode Support
- ✓ Commodore 17XX REU Support (up to 16Meg)
- ✓ RAMLink and RAMDrive DACC Support (up to 16Meg)

Get Your Copy Now!

CKit 94 is available at fine Commodore mail order outlets such as Creative Micro Designs. You may also order directly from us.

Enclose Check or Money Order for:
CKit 94 \$39.95 (Update \$9.95) plus
Shipping \$5 US and Canada (\$10 Foreign)
Update uses Key from earlier version

Mad Man Software, Inc.
1400 East College Drive
Cheyenne, WY 82007
(307) 632-1178 Information

Carrier Detect

By Gaelyne R. Moranec



CONTINUING OUR PRIMER FOR OFF-LINE MAIL READING

-Did you know you can reply to mail on major on-line services off-line, and you don't need an "off-line mail reader" to do so? Did you know you can send Internet E-Mail messages and have files and discussions brought directly to your E-Mail address? You can also create messages for forum or roundtable areas in the same manner.

I prefer to type messages and answer mail while off-line because it saves my on-line time for other things, and I find I'm more relaxed when I know I'm doing something that will save me money. I also have the advantage of using "template" messages for such things as for sale ads and Internet E-Mail requests. I don't need to type a long list of items or complicated commands while on-line, I can use a pre-typed message and use the same message on more than one service.

Almost every on-line service offers Internet E-mail. Over the last year or so, many of the extra features of the Internet have become available via E-Mail, including the ability to subscribe to mailing lists, which allow you to participate and follow in discussions on hundreds of topics. Plus, as I said before, you can also request text or program files and have them sent directly to your E-Mail address.

By using E-Mail this way, you can take advantage of some of the best of the Internet without having to do much in the way of learning, and most of the "work" can be done while off-line. Template messages, created off-line and saved to disk for future use, are invaluable for touring the Internet via E-Mail. I'll explain more about the goodies available to you through Internet E-mail, but first let's cover the basics of writing messages and replying to mail off-line using readily available common programs.

Off-line Messages for On-line Services

What do you need? The first essential is a term program with a buffer that allows you to capture messages you read on-line. It should also have the ability to send what's in the buffer through the modem to the on-line service, but any term that allows you to send text files from disk with an ASCII protocol will also work.

What you use to type your replies with is up to you and what you are most comfortable and familiar with using. The major requirement is that it allow you to save your message to disk in either pet or ASCII format. Most word processors are capable of this, and there are hundreds of text editors (sometimes called sequential file editors) readily available on bulletin boards or on-line services. Many term programs also let you to edit text, and save it, whether via it's buffer, or in the case of Novaterm, by using it's external text editor. If you use either QWKie or QWKRR128, you can also use these programs, but of course messages for the on-line services are saved to disk as a text file rather than as a "reply". It really is a matter of what you are comfortable with using.

If you already have someone in mind to type a message to, there's no need to call the on-line service and buffer any mail first, but if you are replying to forum-type messages, you will first want to get on-line, and capture the messages with the term program's buffer. Even if I'm using a term which allows me to edit text in the buffer, I generally save the entire buffer first so if I make a mistake I can reload it and try again. Once I've saved the buffered mail, I go off-line and either use the facilities in my term program to create a reply, or I save what I've buffered to disk, and load my text editor.

Keep in mind that all lines of your message should be limited to about 72 characters or less. This depends on the service you're accessing, but 72 characters seems to keep the text within the bounds of the majority of on-line services message editors. Lines longer than this can cause your text to "wrap" to the next line and appear jumbled. Each line of your message should have a carriage return after it, as otherwise when you send your message, the on-line service will wrap text for you. This can bring some unexpected and unwanted results. Some text editors will place a carriage return at the end of each line of text automatically, and some don't.

Quoting

Quoting a small amount from the original message allows the person reading your message to know what you're talking about, and keeps the flow of messages a little closer to seeming more like a conversation. There's no "rule" that says you have to use quotes in your replies, either. Often, a simple "RE: <insert subject here>" can do the job of letting others know where your thoughts are coming from.

If you decide to quote text, it's easier if the program you use to edit replies has an insert mode so you can add a ">" before each line of text you are quoting. Try to quote just enough so the recipient can recall what he or she said in their original message, as especially with the on-line services, the time you spend sending your message, as well as the recipients time is at a premium. It makes no sense to quote more than what is necessary.

When you are finished replying, save it to disk. If you have several people you are sending

different replies to, you will need to edit, reply and save each message to disk separately. I try to give these messages meaningful names like "to john.930", so later when I look at the disk, I'll know what I'm looking at. The numerals in this example represent the month and date. I do this to keep track of mail I've sent (or received), and it's especially useful when messaging with the same person over a period of time. You can name your replies anyway you want, just be sure it's easy to remember, and easy to type.

Sending Replies On-line

How you send your finished replies back to the on-line service depends on your term program, and the abilities of the service you're using. Some term programs allow you to "upload" sequential text files from disk using an ASCII protocol, while others let you send the text directly from it's buffer.

Once on-line, either start a new message to the person you are mailing to, such as when sending private mail, or find the message area where your reply belongs, and begin to reply as if you were going to type the message while on-line. When you get to the stage where you would normally type your message, send the already prepared message via your term program instead. Save the message as you normally would.

Because each on-line service has different commands to begin and save messages, I'll not explain this step. Nor will I explain how to send text from your term program, because each program uses different commands to do this. Read the documentation for the program that you use.

If sending text from the term's buffer, save yourself some time and money by loading the buffer with your text before you actually get on-line. If sending multiple messages, it may pay to be ultra frugal and jump to a "free" area of the on-line service when you load the buffer with your text to send, then return to the message area when you're fully prepared. I say "may" because if it's a hassle to do this, then it's not worth the few pennies saved.

If you're sending text from your buffer, it will generally be in the proper ASCII format, but if you are sending text from a disk file, you may find that you need to send your text as "True ASCII" instead of Commodore's Pet ASCII. You can do this in either of two ways, you can save it as True ASCII from your text editor, or if your term program has an option to translate the text to True ASCII as it sends it, toggle it on. Do not use both methods, as it will defeat your purpose. View the message on-line, and if it looks correct, you'll know it worked just fine for you. If the text

appears in jumbled case, as in something like this: "cARRIER dETECT", you will have to change the ASCII translation of your messages.

The Internet via E-Mail

As I mentioned earlier, using Internet E-Mail, you can subscribe to mailing lists and have discussions on just about any topic imaginable brought to your electronic mail box. Subscribe is an appropriate word, as it is very similar to the world of magazines. You can subscribe to half a dozen and suddenly discover yourself overwhelmed by too much E-Mail. Luckily, in the Internet world, it's much easier to get them to stop arriving in your mail box than in the real world. All it takes is sending a message with a single command in it.

You subscribe to a mailing list by sending a message to something called a "list server". Some list servers are actual people that process your request, and some are automated - in other words, some are computers that do the job for you. The easiest way to describe a "list server" is that it's a computer on the other end that acts on the commands (messages) you send it via E-Mail.

Subscribing to a mailing list involves knowing two things; the Internet address for the list server, and the command (what you type in your message) needed to subscribe. Some add your name and E-Mail address to the list immediately and send back a confirmation message. Others return a message with instructions on how to confirm that you really want to subscribe. If you don't return confirmation within 48 hours, you are not added to it. After you've subscribed, you can receive a message which gives the commands available to you by sending a message to the list server with the word "help" as the body of the message. There are more than one kind of list server, and each use similar, but not necessarily the same commands, but "help" seems to be universal.

Mailing lists always have **TWO** Internet addresses, one for the administration of the list, such as subscribing, and another address which is used to reply or send messages to all the subscribers on the list. Messages sent to the administration address are the commands used to control how you receive messages from it. Messages sent to the list address get mailed to each and every subscriber. If you screw up and send a command to the second address, each subscriber will receive the cyberspace equivalent of junk mail.

When you receive mail from a mailing list, it comes addressed to you, as this is how the list server sends mail out to subscribers. You need to treat it as mail addressed to "ALL". It takes some

getting used to, as it can be a real surprise to receive mail from a complete stranger addressed directly to you. Just remember that everyone else on the mailing list also received the exact same message.

The "COMMODORE" mailing list is said to mirror the comp.sys.cbm newsgroup (an area on the Internet with messages concerning Commodore users), but the list isn't quite as active as the newsgroup. News items concerning things of interest to Commodore users are posted several times a week. To subscribe to this list, the administration address is:

`listserv@ubvm.cc.buffalo.edu`

In the first line of your message, type:

`subscribe commodor firstname lastname`

Type your real first and last name. Other commands you can send to this address are:

review commodor - sends you a list of who the subscribers are, and of course, <bold on>

help - sends a message that explains how to send other commands.

To send mail or reply to a message on this list, the address is:

`commodor@ubvm.cc.buffalo.edu`

There's even a mailing list which sends out messages about new lists available. I subscribed to this for about a month and during that time received on the average 2 or 3 messages a day with info about new lists. The address to subscribe is:

`listserv@vm1.nodak.edu`

To subscribe, use the same procedure as above. To cancel your subscription, send the following command as a message to the same address:

`SIGNOFF NEW-LIST.`

Files by E-Mail

Both text and program (binary) files can be "ordered" and delivered to your E-Mail address. Because there are extra considerations with binary files, I'll cover these in a future issue. Text files can be FAQ (Frequently Asked Questions) files (almost every usenet newsgroup has their own), or other types of text files such as the list of lists (a list of all mailing lists available).

Since the Internet is big, it seems fitting that
(continued on following page)

Carrier Detect (continued from previous page)

some of the files available can be gargantuan in size. If you are concerned about the size of files you receive via E-Mail, you can specify the maximum number of characters each individual message contains by using the **size** command. Before the file is sent to your E-Mail address, it is split into several messages of the number of characters specified. The size command must be placed before the path and name of the file(s) requested. There's one problem with using this command - the order you receive the messages with the file in it are not always in the same order as the original file. This takes care of any problems we as Commodore users may have with buffer size, but it takes some editing to put the text file back into its original order.

The **quit** command is used to tell the mailserver that your message is over. This is useful when using an off-line mail reader that adds text after the actual message.

Here are two "templates" for requesting files via E-Mail. For those who have access to Internet E-Mail and use an Off-line Mail Reader, the first line of the message should contain the word "To:" followed by the address as shown below. Those who are sending mail via an on-line service can omit the "To:" and send E-Mail to the address which follows it. The size command is optional.

To receive the current comp.sys.cbm faq files, posted around the 5th and the 20th of each month:

```
To: mail-server@rtfm.mit.edu
size 20000
send /usenet/comp.sys.cbm/main-faq/part1
send /usenet/comp.sys.cbm/main-faq/part2
send /usenet/comp.sys.cbm/main-faq/part3
send /usenet/comp.sys.cbm/main-faq/part4
quit
```

To receive part one of the current "List of Lists":

```
To: mail-server@rtfm.mit.edu
size 20000
send /pub/usenet/news.answers/mail/mailling-lists/part1
quit
```

Note: There are currently 14 parts to this list.

The above examples are from personal template files that I have on disk and added to this article by appending them to my text file. I did this because I've used these templates for file requests, so I know the address path and file names are correct. This is one of the more compelling reasons I know of to keep and use template files for sending mail. Plus, I have the advantage of making only minor changes should I decide to request other files from the same address, without the need to retype the entire message.

In future issues, I'll cover requesting binary files through E-Mail, as well as other commands you can use when requesting files or subscribing to mailing lists. If you've never explored the Internet, E-Mail is a great place to start. As you can see, you can have the Internet come directly to your mail box without much work at all. Knowing how to prepare text off-line to send E-Mail messages makes it even easier. It can save you time and as you know, especially with on-line services, "time is money".



In the next issue of

COMMODORE WORLD

What's in a Word?

What's the most common use of computers today? Without a doubt, it's word processing. Commodore World takes a look at the field of available word processors and helps you to determine which have the features you need.

History of the Internet

Take a stroll down telecommunications lane with this historical review of the Internet.

Neat Output

Make your printed output look its best with these tips on printer programming.

And a whole lot more!

* CLASSIFIED ADS *

The Underground is a mini-magazine for C= users. Send \$11 for a 6 issue sub (\$2 for sample) - the Underground, 4574 Via Santa Maria, Santa Maria CA 93455

C64/128 PUBLIC DOMAIN. REQUEST FREE CATALOG OR SEND \$2 FOR A DEMO & CATALOG. CALOKE IND., P.O. BOX 18477, RAYTOWN, MO. 64133. VISA-M/CARD ACCEPTED.

HUGE LIST of new & used Commodore software, hardware, and accessories! Send \$1. Low prices! Computer Bargain Store, 3366 S. 2300 E., S.L.C., Ut. 84109

C-64 FOREIGN-AMERICAN Utilities, Graphics, Hacker, Arcade, Adult. 29¢ stamp gets catalog. Home-Spun Software, POB 1064-CW, Estero, FL 33928

Over The Edge

By Don Radler



GUI'S, MICE & THEIR EFFECT ON HUMAN EVOLUTION

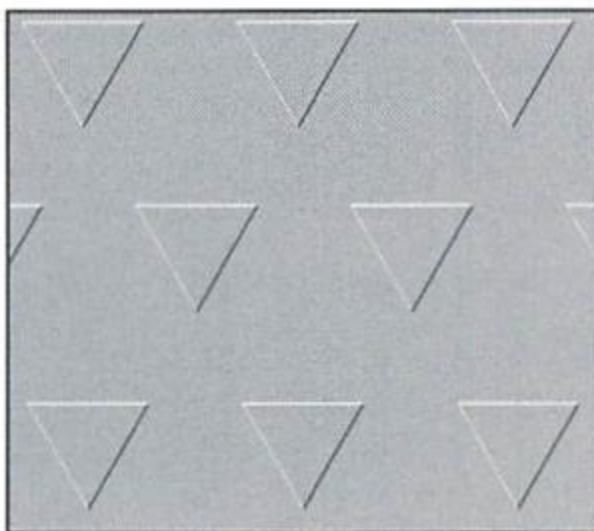
One in three American homes today has a computer. Many are powerful machines much like those that people use at work, based on superfast 486DX or Pentium chips. As Charles A. Christianson pointed out in the April issue of CW, a basic system with this kind of power can be bought for the trifling sum of \$3,489!

Cost aside, the industry would have you believe that all is for the best in this best of all computing worlds. But is it really?

About a decade ago, when the C64 was a new phenomenon, Raj Reddy of the Carnegie Mellon Institute was quoted as saying, "If you can build an artifact that can permit you to think and act hundreds of times faster than you're currently able to, you will be much further ahead in the evolutionary process."

After writing an article in 1992 that said our Commodores make us think more than do PC's and Mac's, I began to wonder what effect those user-friendly computers could have on human evolution. Might they, indeed, serve to retard it?

Let's look at the principal smart power tool that makes PC's and Mac's so easy to use: the graphical user interface. Written as GUI and pronounced GOO-ey, this is the screen image a Mac or PC user sees. It shows pictures called icons. Manipulating a mouse that rolls over a desktop, the user points an on-screen arrow at an icon and clicks a button. This initiates an action by the machine. Gooeys replace the command line with which Commodore users instruct their machines in words and numbers that both the machines and the operators understand. (Even Commodore users working within the GEOS environment still employ words and numbers in place of mouse-clicks before and after they enter that environment. And most of them worked



with the command line interface long before they ever saw the GEOS gooey.)

Substituting point-and-click for a written command removes the subsequent action one step further from the mind that orders the action taken. The electronic brain may be fully occupied, but the human mind is left standing on the unemployment line. The connection between pointing and clicking - the thinking process - is performed, not by the human, but by the machine.

Meanwhile, using computers without knowing anything about programming is tantamount to ignoring the machines' most significant teaching potential. When you program, even a little, you delineate a problem, devise a possible solution, and then instruct the machine in how to go about achieving this end. In short, you THINK.

My daughter, who has been doing a little C64 programming since she was in elementary school, is now a high school sophomore. She's doing some word processing on a PC in the Windows environment, and she is learning something. On the other hand, at no point in her computer courses to date has the word "programming" even been mentioned. Indeed, what's called

"computer literacy" seems to mean the ability to turn a computer on, boot up a program, use that program, and then turn the computer off.

Throughout America, few schools teach anything about programming, the one computer activity that can help students understand and refine their own thought processes. You don't inspire kids to become programmers this way, and you don't add to the pool of creative minds that America needs to maintain any kind of competitive edge.

As humorist Erma Bombeck has written, "Educators have made some great contributions toward making school more interesting, but along the way we've produced a generation with a one-word vocabulary, 'like', and the inability to be involved in the thinking process. Not to mention the attention span of a gnat."

Net result: America is falling ever farther behind in the competition for control of the information age that is already upon us. Proof? In recent years, the companies that win the largest number of U.S. patents are always Japanese companies such as Hitachi.

Our computer industry keeps putting faster and more powerful machines into more and more American homes. All they demand of us is to point-and-click. The industry knows full well that its machines understand more about what they're doing than we do. And that's fine with the industry, just as long as we keep buying.

The industry keeps telling us how smart its machines are, and never worries about how they may be making us dumber. Indeed, then IBM president Jack Kuehler said in a trade show speech a few years back, "Instead of making people computer-literate, we have to make computers more people-literate."

Now we're well on the way to linking computers with television, the medium already famed for its lack of substance. Marshall McLuhan's medium, which IS the message, is taking over. To help it do so, the industry has concocted a multimedia spaghetti in which computers come all tangled up with TV's, VCR's and CD's. This puts encyclopedias on compact disks, to be sure, but the real focus is on entertainment. That, after all, is where the money is.

And just around the next corner lies virtual reality, a digitally-synthesized experience that employs visual, sonic and tactile stimuli to make us believe we're actually doing something. In other words, a very complex game that we can see, hear and feel so convincingly that we become part of the game play.

Does this remind you of Aldous Huxley's BRAVE NEW WORLD, with its "seven and a half hours of mild, unexhausting labour, and then the somnolence and games and...the feelies?" It must have so reminded the editors of BUSINESS WEEK, who recently called the latest electronic developments "this Brave New Digital World."

In virtual reality, according to Mark Weiser, the head of the Computer Science Laboratory at PARC, the Xerox Palo Alto Research Center, "the outside world and all its inhabitants effectively cease to exist."

To be replaced by what? A gooey and a mouse?

Toward the end of his monumental ASCENT OF MAN, Jacob Bronowski describes man as "nature's unique experiment to make the rational intelligence prove itself sounder than the reflex." For that unique experiment to succeed, we must think better and know more, not just feel better and be entertained.

If we fail, our PC's will have become the enemies of our IQ's; the point-and-click reflex will have won out over rational intelligence. No bang, no whimper. Just a gooey, a mouse and a click.

As I wrote in that Compute's Gazette article in 1992, users of Commodore 64/128's, who must think a little to make their machines do anything at all, enjoy some protection against creeping computer illiteracy. But there's always the temptation to put our "obsolete" machines in the closet and buy into one of the state-of-the-art platforms. We know that'll cost us. We should wonder how much it will cost our children, and maybe their children's children as well.



DON'T WAIT UNTIL IT'S TOO LATE— RENEW EARLY!

Is your Commodore World Subscription getting close to running out? There's an easy way to check. Look at the mailing label on the front of your copy. There you'll find your subscription number and the expiration issue number. For example:

James Smith 12345EXP08
123 Home Street
Grand Rapids, MI 49502-0123

Jim's subscription will run out with issue 8, as indicated by the EXP08 in his subscription code. Jim would be wise to re-subscribe early to avoid missing a single issue of Commodore World!

ADVERTISERS INDEX

64 Disk Connection	39
Caloke Industries	(Classified) 54
CEE-64 Alive!	7
Centsible Software	39
Color64	7
Commodore World	17, Inside Back Cover
Computer Bargain Store	(Classified) 54
Creative Micro Designs	17, 25, 28, 29, 37
Creative Pixels	13
dieHard	5
FGM Connection	13
Harvey & Associates	7
Home-Spun Software	(Classified) 54
J.P. Products by Mail	39
Kasara	37
Living Proof	39
Loadstar	9, 31
Mad Man Software	51
Master Software	15
Phoenix Network	7
Software Hut	3
Software Support Int.	Inside Front Cover
Sunrise Software	48
Tycom	13

Commodore World Classified Advertising

Commodore World Subscribers may place non-commercial classified advertising in Commodore World at a cost of \$10.00 per issue. Your advertisement may contain up to 150 characters (including spaces). Send your advertisement with payment to: CW Classified Advertising, c/o Creative Micro Designs, Inc., P.O. Box 646, East Longmeadow MA 01028-0646.

Authors:

If you have an interesting subject which you can write about, and would like to see your article published here in Commodore World, send for our Author's Guidelines by mailing a request to:

CW Author's Guidelines
c/o Creative Micro Designs, Inc.
P.O. Box 646
East Longmeadow, MA 01028-0646

A Whole New World

for C-64 and C-128 users



Stop **RUN**ning around looking for the latest **COMPUTER** news!

Look to *Commodore World* for up-to-date information on Commodore 64 and 128 computing. *Commodore World* feature articles give you insight into getting the most from your hardware and software. Regular columns featuring noted Commodore experts keep you informed on what is happening in the world of Commodore. Plus, industry news straight from the newsmakers themselves, telecommunications and BBS news and information, GEOS tips and tutorials, User Group information, programming tips, reviews of hardware and software products, advertisements from current suppliers, and a whole lot more. *Commodore World* is so packed with useful information, that you won't want to miss a single issue, so send for your subscription today!



Each issue is packed with

- In-depth Feature Articles
- New Product Reviews
- GEOS Coverage
- BASIC/ML Programming
- Telecommunications
- Foreign Market Coverage
- Hardware Projects
- Timely Editorials
- Lots of Advertisers

...and much more!

Just Listen to What Our Readers Have to Say About Commodore World!

It is a very professional looking publication, though I would have expected no less from CMD. CW is a must-have...Nice Work!

- Ed Bell, CMD Conference, Fidonet

I got mine today and leafed through it and was VERY, VERY impressed.

- I. McKinney, Commodore RT, GENie

WOW! It's beautiful! I just received my first issue of Commodore World...THANK YOU, THANK YOU, THANK YOU!

- John Marcelle, Manteca, CA

What a terrific effort! This promises to be a landmark publication ...

- Edward Rohan, Anaheim, CA

YES!

Please begin my one year Commodore World subscription (8 issues) as soon as possible

To order by phone call 1-800-638-3263

Subscriber Information

Name _____

Address _____

City _____ State/Prov. _____ Zip/PC _____

Country _____ Phone () _____

Payment Information

☐ Bill me later! (1 year subscription only)

☐ I've enclosed a check or money order in U.S. funds

☐ Bill my subscription to: ☐ Visa ☐ MasterCard

Card Number _____ Exp. Date _____

Signature _____

1 Year Subscription:

☐ United States \$29.95 ☐ Can. and Mex. \$35.95

☐ Europe (EC Only) \$45.95 ☐ Other Foreign \$57.95

Back Issues:

Back issues are available for \$4.95 each (\$4.00 each for 3 or more) plus shipping (\$2.00 plus \$1.00 for each additional back issue, U.S. & Canada only. Foreign addresses please call for shipping charges.)

Make all checks payable to: Creative Micro Designs, Inc.

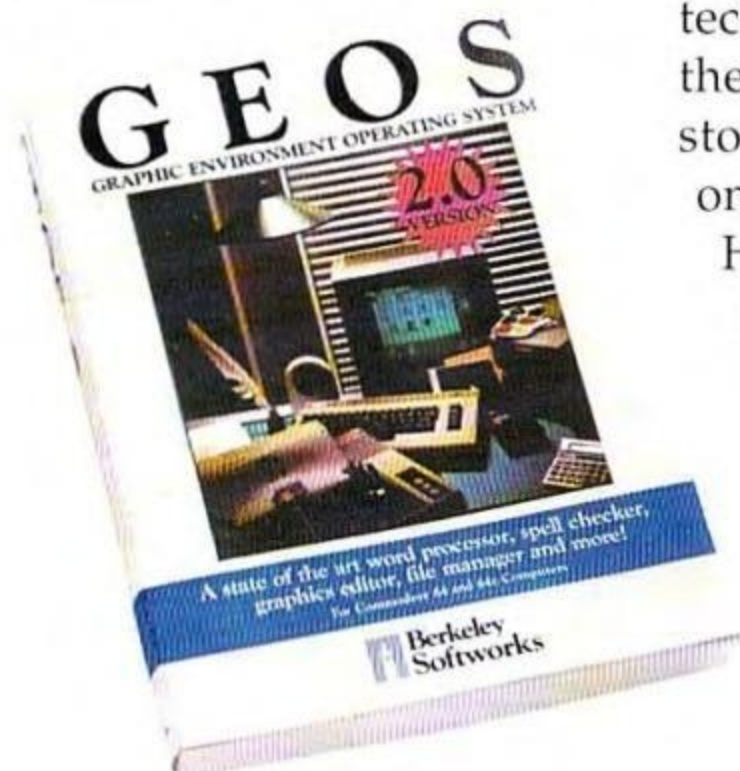
Send subscriptions to: **Creative Micro Designs, Inc.**
P.O. Box 646
East Longmeadow, MA 01028

NO MATTER WHAT YOU DO ON A COMMODORE, DO IT WITH GEOS.

And with the whole GEOS™ family to choose from, you're bound to be able to do a lot of things you've always wanted to do. From word processing to desktop publishing, database management to programming, there's a GEOS application for nearly everything imaginable.

Do it easily.

Not only will you find a host of applications ready to use with GEOS, you'll also find out they're all easy to use. Why? Because GEOS applications share one very important thing in common...

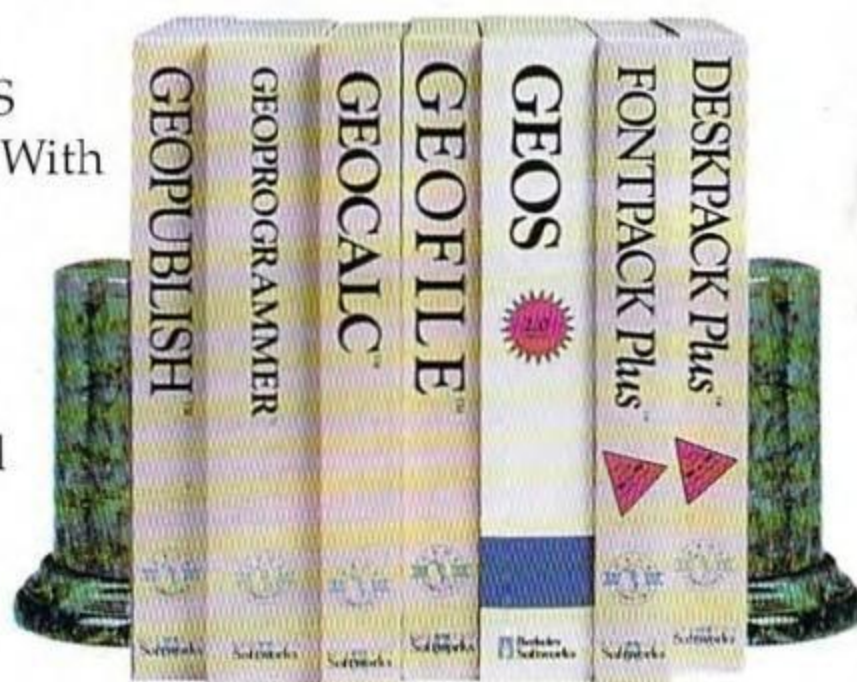


...the intuitive GEOS graphical interface. With a simple point and click operating system, pull-down menus, and easy to use dialog boxes, all GEOS applications will make you feel instantly comfortable with selecting options, entering data, printing, and everything else.

Do it fast.

With a wide range of devices now supported, GEOS can operate at speeds you'll hardly believe. Get quick response from newer technology disk drives, like the CMD FD Series™ and store mega amounts of data on a CMD HD Series™

Hard Drive. And for even faster operation, GEOS works with RAM-based devices such as the Commodore REU or CMD RAMLink™.



Do it better.

GEOS has always supported a wide range of printers. Now, more than ever, GEOS is the logical choice for getting your ideas onto paper. For modern 9- and 24-pin IBM- or Epson-compatible printers, Perfect Print™ for GEOS provides output quality unrivaled by any other software for the Commodore.

Do it now.

So what are you waiting for? GEOS is ideal for most anything you want to do. And there's no better time than the present for doing it!



GEOS™, GEOPUBLISH™, GEOPROGRAMMER™, GEOCALC™, GEOFILE™, FONTPACK Plus™, and DESKPACK Plus™ are trademarks of Geoworks, and distributed by Creative Micro Designs, Inc. FD Series™, HD Series™, RAMLink™ and Perfect Print™ are trademarks of Creative Micro Designs, Inc.